# Nuclear Util Aff

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### 1AC – Prolif

#### Nuclear Power multiplies the risk for nuclear proliferation and nuclear terror – safeguards are uncertain and nuclear power weakens them

Miller and Sagan 9 - Steven E. Miller, Director, International Security Program; Editor-in-Chief, International Security; Co-Principal Investigator, Project on Managing the Atom, Scott Sagan, Former Research Fellow, International Security Program, 1981-1982; Editorial Board Member, Quarterly Journal: International Security ("Nuclear Power Without Nuclear Proliferation?" Journal Article, Daedalus, volume 138, issue 4, pages 7-18, <http://belfercenter.hks.harvard.edu/publication/19850/nuclear_power_without_nuclear_proliferation.html>) RMT

Today, the Cold War has disappeared but thousands of those weapons have not. In a strange turn of history, the threat of global nuclear war has gone down, but the risk of a nuclear attack has gone up. More nations have acquired these weapons. Testing has continued. Black market trade in nuclear secrets and nuclear materials abound. The technology to build a bomb has spread. Terrorists are determined to buy, build or steal one. Our efforts to contain these dangers are centered on a global non-proliferation regime, but as more people and nations break the rules, we could reach the point where the center cannot hold.

—President Barack Obama Prague, April 5, 2009

The global nuclear order is changing. Concerns about climate change, the volatility of oil prices, and the security of energy supplies have contributed to a widespread and still-growing interest in the future use of nuclear power. Thirty states operate one or more nuclear power plants today, and according to the International Atomic Energy Agency (IAEA), some 50 others have requested technical assistance from the agency to explore the possibility of developing their own nuclear energy programs. It is certainly not possible to predict precisely how fast and how extensively the expansion of nuclear power will occur. But it does seem probable that in the future there will be more nuclear technology spread across more states than ever before. It will be a different world than the one that has existed in the past.

This surge of interest in nuclear energy — labeled by some proponents as "the renaissance in nuclear power" — is, moreover, occurring simultaneously with mounting concern about the health of the nuclear nonproliferation regime, the regulatory framework that constrains and governs the world's civil and military-related nuclear affairs. The Nuclear Non-Proliferation Treaty (NPT) and related institutions have been taxed by new worries, such as the growth in global terrorism, and have been painfully tested by protracted crises involving nuclear weapons proliferation in North Korea and potentially in Iran. (Indeed, some observers suspect that growing interest in nuclear power in some countries, especially in the Middle East, is not unrelated to Iran's uranium enrichment program and Tehran's movement closer to a nuclear weapons capability.) Confidence in the NPT regime seems to be eroding even as interest in nuclear power is expanding.

This realization raises crucial questions for the future of global security. Will the growth of nuclear power lead to increased risks of nuclear weapons proliferation and nuclear terrorism? Will the nonproliferation regime be adequate to ensure safety and security in a world more widely and heavily invested in nuclear power? The authors in this two-volume (Fall 2009 and Winter 2010) special issue of Dædalus have one simple and clear answer to these questions: It depends.

On what will it depend? Unfortunately, the answer to that question is not so simple and clear, for the technical, economic, and political factors that will determine whether future generations will have more nuclear power without more nuclear proliferation are both exceedingly complex and interrelated. How rapidly and in which countries will new nuclear power plants be built? Will the future expansion of nuclear energy take place primarily in existing nuclear power states or will there be many new entrants to the field? Which countries will possess the facilities for enriching uranium or reprocessing plutonium, technical capabilities that could be used to produce either nuclear fuel for reactors or the materials for nuclear bombs? How can physical protection of nuclear materials from terrorist organizations best be ensured? How can new entrants into nuclear power generation best maintain safety to prevent accidents? The answers to these questions will be critical determinants of the technological dimension of our nuclear future.

The major political factors influencing the future of nuclear weapons are no less complex and no less important. Will Iran acquire nuclear weapons; will North Korea develop more weapons or disarm in the coming decade; how will neighboring states respond? Will the United States and Russia take significant steps toward nuclear disarmament, and if so, will the other nuclear-weapons states follow suit or stand on the sidelines?

The nuclear future will be strongly influenced, too, by the success or failure of efforts to strengthen the international organizations and the set of agreements that comprise the system developed over time to manage global nuclear affairs. Will new international or regional mechanisms be developed to control the front-end (the production of nuclear reactor fuel) and the back-end (the management of spent fuel containing plutonium) of the nuclear fuel cycle? What political agreements and disagreements are likely to emerge between the nuclear-weapons states (NWS) and the non-nuclear-weapons states (NNWS) at the 2010 NPT Review Conference and beyond? What role will crucial actors among the NNWS — Japan, Iran, Brazil, and Egypt, for example — play in determining the global nuclear future? And most broadly, will the nonproliferation regime be supported and strengthened or will it be questioned and weakened? As IAEA Director General Mohamed ElBaradei has emphasized, "The nonproliferation regime is, in many ways, at a critical juncture," and there is a need for a new "overarching multilateral nuclear framework."1 But there is no guarantee that such a framework will emerge, and there is wide doubt that the arrangements of the past will be adequate to manage our nuclear future effectively.

#### Prolif in new states causes nuclear conflict.

Kroenig 14 – Matthew, Associate Professor and International Relations Field Chair at Georgetown University, and Nonresident Senior Fellow in the Brent Scowcroft Center on International Security at The Atlantic Council (“The History of Proliferation Optimism: Does It Have A Future?”, April 2014, http://www.matthewkroenig.com/The%20History%20of%20Proliferation%20Optimism\_Feb2014.pdf)

The spread of nuclear weapons poses a number of severe threats to international peace and security including: nuclear war, nuclear terrorism, global and regional instability, constrained freedom of action, weakened alliances, and further nuclear proliferation. Each of these threats has received extensive treatment elsewhere and this review is not intended to replicate or even necessarily to improve upon these previous efforts. Rather the goals of this section are more modest: to usefully bring together and recap the many reasons why we should be pessimistic about the likely consequences of nuclear proliferation. Many of these threats will be illuminated with a discussion of a case of much contemporary concern: Iran’s advanced nuclear program. Nuclear War. The greatest threat posed by the spread of nuclear weapons is nuclear war. The more states in possession of nuclear weapons, the greater the probability that somewhere, someday, there will be a catastrophic nuclear war. To date, nuclear weapons have only been used in warfare once. In 1945, the United States used nuclear weapons on Hiroshima and Nagasaki, bringing World War II to a close. Many analysts point to the sixty-five-plus-year tradition of nuclear non-use as evidence that nuclear weapons are unusable, but it would be naïve to think that nuclear weapons will never be used again simply because they have not been used for some time. After all, analysts in the 1990s argued that worldwide economic downturns like the great depression were a thing of the past, only to be surprised by the dot-com bubble bursting later in the decade and the Great Recession of the late Naughts.49 This author, for one, would be surprised if nuclear weapons are not used again sometime in his lifetime. Before reaching a state of MAD, new nuclear states go through a transition period in which they lack a secure second-strike capability. In this context, one or both states might believe that it has an incentive to use nuclear weapons first. For example, if Iran acquires nuclear weapons, neither Iran, nor its nuclear-armed rival, Israel, will have a secure, second-strike capability. Even though it is believed to have a large arsenal, given its small size and lack of strategic depth, Israel might not be confident that it could absorb a nuclear strike and respond with a devastating counterstrike. Similarly, Iran might eventually be able to build a large and survivable nuclear arsenal, but, when it first crosses the nuclear threshold, Tehran will have a small and vulnerable nuclear force. In these pre-MAD situations, there are at least three ways that nuclear war could occur. First, the state with the nuclear advantage might believe it has a splendid first strike capability. In a crisis, Israel might, therefore, decide to launch a preventive nuclear strike to disarm Iran’s nuclear capabilities. Indeed, this incentive might be further increased by Israel’s aggressive strategic culture that emphasizes preemptive action. Second, the state with a small and vulnerable nuclear arsenal, in this case Iran, might feel use ‘em or loose ‘em pressures. That is, in a crisis, Iran might decide to strike first rather than risk having its entire nuclear arsenal destroyed. Third, as Thomas Schelling has argued, nuclear war could result due to the reciprocal fear of surprise attack.50 If there are advantages to striking first, one state might start a nuclear war in the belief that war is inevitable and that it would be better to go first than to go second. Fortunately, there is no historic evidence of this dynamic occurring in a nuclear context, but it is still possible. In an Israeli-Iranian crisis, for example, Israel and Iran might both prefer to avoid a nuclear war, but decide to strike first rather than suffer a devastating first attack from an opponent. Even in a world of MAD, however, when both sides have secure, second-strike capabilities, there is still a risk of nuclear war. Rational deterrence theory assumes nuclear-armed states are governed by rational leaders who would not intentionally launch a suicidal nuclear war. This assumption appears to have applied to past and current nuclear powers, but there is no guarantee that it will continue to hold in the future. Iran’s theocratic government, despite its inflammatory rhetoric, has followed a fairly pragmatic foreign policy since 1979, but it contains leaders who hold millenarian religious worldviews and could one day ascend to power. We cannot rule out the possibility that, as nuclear weapons continue to spread, some leader somewhere will choose to launch a nuclear war, knowing full well that it could result in self-destruction. One does not need to resort to irrationality, however, to imagine nuclear war under MAD. Nuclear weapons may deter leaders from intentionally launching full-scale wars, but they do not mean the end of international politics. As was discussed above, nuclear-armed states still have conflicts of interest and leaders still seek to coerce nuclear-armed adversaries. Leaders might, therefore, choose to launch a limited nuclear war.51 This strategy might be especially attractive to states in a position of conventional inferiority that might have an incentive to escalate a crisis quickly. During the Cold War, the United States planned to use nuclear weapons first to stop a Soviet invasion of Western Europe given NATO’s conventional inferiority.52 As Russia’s conventional power has deteriorated since the end of the Cold War, Moscow has come to rely more heavily on nuclear weapons in its military doctrine. Indeed, Russian strategy calls for the use of nuclear weapons early in a conflict (something that most Western strategists would consider to be escalatory) as a way to de-escalate a crisis. Similarly, Pakistan’s military plans for nuclear use in the event of an invasion from conventionally stronger India. And finally, Chinese generals openly talk about the possibility of nuclear use against a U.S. superpower in a possible East Asia contingency. Second, as was also discussed above, leaders can make a “threat that leaves something to chance.”53 They can initiate a nuclear crisis. By playing these risky games of nuclear brinkmanship, states can increases the risk of nuclear war in an attempt to force a less resolved adversary to back down. Historical crises have not resulted in nuclear war, but many of them, including the 1962 Cuban Missile Crisis, have come close. And scholars have documented historical incidents when accidents nearly led to war.54 When we think about future nuclear crisis dyads, such as Iran and Israel, with fewer sources of stability than existed during the Cold War, we can see that there is a real risk that a future crisis could result in a devastating nuclear exchange. Nuclear Terrorism. The spread of nuclear weapons also increases the risk of nuclear terrorism.55 While September 11th was one of the greatest tragedies in American history, it would have been much worse had Osama Bin Laden possessed nuclear weapons. Bin Laden declared it a “religious duty” for Al Qaeda to acquire nuclear weapons and radical clerics have issued fatwas declaring it permissible to use nuclear weapons in Jihad against the West.56 Unlike states, which can be more easily deterred, there is little doubt that if terrorists acquired nuclear weapons, they would use them. Indeed, in recent years, many U.S. politicians and security analysts have argued that nuclear terrorism poses the greatest threat to U.S. national security.57 Analysts have pointed out the tremendous hurdles that terrorists would have to overcome in order to acquire nuclear weapons.58 Nevertheless, as nuclear weapons spread, the possibility that they will eventually fall into terrorist hands increases. States could intentionally transfer nuclear weapons, or the fissile material required to build them, to terrorist groups. There are good reasons why a state might be reluctant to transfer nuclear weapons to terrorists, but, as nuclear weapons spread, the probability that a leader might someday purposely arm a terrorist group increases. Some fear, for example, that Iran, with its close ties to Hamas and Hezbollah, might be at a heightened risk of transferring nuclear weapons to terrorists. Moreover, even if no state would ever intentionally transfer nuclear capabilities to terrorists, a new nuclear state, with underdeveloped security procedures, might be vulnerable to theft, allowing terrorist groups or corrupt or ideologically-motivated insiders to transfer dangerous material to terrorists. There is evidence, for example, that representatives from Pakistan’s atomic energy establishment met with Al Qaeda members to discuss a possible nuclear deal.59 Finally, a nuclear-armed state could collapse, resulting in a breakdown of law and order and a loose nukes problem. U.S. officials are currently very concerned about what would happen to Pakistan’s nuclear weapons if the government were to fall. As nuclear weapons spread, this problem is only further amplified. Iran is a country with a history of revolutions and a government with a tenuous hold on power. The regime change that Washington has long dreamed about in Tehran could actually become a nightmare if a nuclear-armed Iran suffered a break down in authority, forcing us to worry about the fate of Iran’s nuclear arsenal. Regional Instability: The spread of nuclear weapons also emboldens nuclear powers, contributing to regional instability. States that lack nuclear weapons need to fear direct military attack from other states, but states with nuclear weapons can be confident that they can deter an intentional military attack, giving them an incentive to be more aggressive in the conduct of their foreign policy. In this way, nuclear weapons provide a shield under which states can feel free to engage in lower-level aggression. Indeed, international relations theories about the “stability-instability paradox” maintain that stability at the nuclear level contributes to conventional instability.60 Historically, we have seen that the spread of nuclear weapons has emboldened their possessors and contributed to regional instability. Recent scholarly analyses have demonstrated that, after controlling for other relevant factors, nuclear-weapon states are more likely to engage in conflict than nonnuclear-weapon states and that this aggressiveness is more pronounced in new nuclear states that have less experience with nuclear diplomacy.61 Similarly, research on internal decision-making in Pakistan reveals that Pakistani foreign policymakers may have been emboldened by the acquisition of nuclear weapons, which encouraged them to initiate militarized disputes against India.62

### 1AC – Heg

#### Surge in nuclear energy challenges the NPT

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This surge of interest in nuclear energy — labeled by some proponents as "the renaissance in nuclear power" — is, moreover, occurring simultaneously with mounting concern about the health of the nuclear nonproliferation regime, the regulatory framework that constrains and governs the world's civil and military-related nuclear affairs. The Nuclear Non-Proliferation Treaty (NPT) and related institutions have been taxed by new worries, such as the growth in global terrorism, and have been painfully tested by protracted crises involving nuclear weapons proliferation in North Korea and potentially in Iran. (Indeed, some observers suspect that growing interest in nuclear power in some countries, especially in the Middle East, is not unrelated to Iran's uranium enrichment program and Tehran's movement closer to a nuclear weapons capability.) Confidence in the NPT regime seems to be eroding even as interest in nuclear power is expanding.

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#### NPT key to heg – global compliance strengthens perception of US primacy

Gibbons 16 [Rebecca Davis Gibbons (PhD candidate at Georgetown), "American Hegemony and the Politics of the Nuclear Nonproliferation Regime" Georgetown Dissertations, 4/15/2016] AZ

This project illustrated how commitment patterns within the nuclear nonproliferation regime differ from other multilateral treaty regimes. In the extant academic literature, domestic political factors are widely reported as the key variables for explaining variation in commitment for many treaty regimes, including those related to human rights, trade, and the environment. In contrast, for the nuclear nonproliferation regime the role of the hegemon is paramount for explaining commitment. The hegemon is the key factor in explaining how this regime works for three interrelated reasons: the regime was established by and continues to be promoted by the hegemon, the hegemon has a greater strategic interest in the regime’s success than all other states, and the regime is global. The first reason why this regime may be different than others is the fact that the hegemon established the regime initially and continues to have deep involvement in its perpetuation. Because of the hegemon’s role within the regime, all other states associate the regime with the hegemon’s leadership. This contrasts with other institutions in which a less powerful state or grouping of states established the treaty or regime. If the institutions are not founded by the hegemon, they are less likely to be perceived as part of the hegemonic global order and the mechanisms of hegemonic leadership are unlikely to apply. Other factors, such as domestic politics or regime type, would likely explain variation in commitment in these cases.

The second reason the hegemon matters to explaining variation in commitment with this regime is because of the difference in interests among the parties involved. The hegemon has a much greater strategic interest than other states in preventing additional nuclear weapons states around the globe and thus prioritizes this issue, as illustrated by the history of the regime. Moreover, the hundreds of federal workers at the U.S. State Department, Department of Defense, Department of Energy, Department of the Treasury, Department of Commerce, and across the Intelligence Community, tasked in some way with addressing global proliferation illustrate this commitment to nuclear nonproliferation. Many other states in the international system do not prioritize this issue on a global scale, and certainly not with commensurate resources to that of the United States. These states thus do not immediately seek to join new elements of the regime, and as a result, the hegemon must work to persuade them to commit. If all states cared about global nuclear nonproliferation as much as the hegemon, there would not be such variation in commitment and the hegemon would not need carrots and sticks to garner commitment. Though the majority of states do reap absolute gains (versus relative gains) from the success of the nonproliferation regime, the value of those absolute gains are not equal—they are much greater for the hegemon. In other institutions where states’ gains are more equal, other factors, especially those at the domestic level, are likely to explain variation in commitment.

The final reason why the mechanisms of commitment are different in this regime is because the hegemon seeks a truly global regime. Proliferation anywhere potentially weakens the aspirations of the hegemon. In regional institutions, the hegemon may be completely absent and then other factors would explain variation in states’ commitment. Interests are also less likely to be as divergent in regional institutions as they are in a global regime. For example, many regions around the globe now have Nuclear Weapons Free Zones, negotiated among the states in a particular geographic area. Because these institutions exist at the regional level, states are likely to perceive them as more relevant to their regional security than the global nuclear nonproliferation regime, and mechanisms of commitment will be less likely to stem from the hegemon than regional and domestic influences.

#### The NPT is the basis for the global non-proliferation regime – it provides monitoring standards and a multilateral framework for nuclear development

Bano 14 [Saira Bano (PhD candidate in the Centre for Military and Strategic Studies at the University of Calgary), "Is the NPT Irrelevant?," International Policy Digest, 11/29/2014] AZ

The Non-Proliferation Treaty (NPT), despite being discriminatory and fragile, has sustained its existence and currently enjoys near-universal membership. In March 1970, the NPT came into effect and since then has provided a foundation for legal and political efforts to curb the spread of nuclear weapons. The NPT is a nearly universal (except for India, Pakistan, Israel and North Korea) treaty and the linchpin of the global nonproliferation regime. The NPT is a bargain between NWSs (nuclear weapons states) and NNWSs (non-nuclear weapons states) in which NWSs (the United States, Russia, France, UK and China) agreed to share nuclear technology for peaceful purposes and gradually disarm their nuclear arsenals while NNWSs agreed not to develop nuclear weapons and to accept IAEA (International Atomic Energy Agency) safeguards. It is pertinent to ask why the NPT, despite its imposition of unequal rights, has survived so long and why the membership has grown to be nearly universal. In 1963 President Kennedy warned that 15 to 25 nations could possess nuclear weapons within a decade. Forty-four years later, mostly due to the NPT, only nine countries have reached the nuclear-weapon threshold. Forty-four countries are considered to be capable of producing nuclear weapons, but have decided not to develop them. The states that tried to develop them reversed the status of their nuclear arsenals. In this regard, the treaty is a success. The NPT has provided a mechanism to monitor the nuclear related activities. The treaty and the IAEA safeguards have provided the tools to limit the spread of nuclear weapons. Most of the literature has focused on the failures of the treaty but it is important that the successes should equally be focused on to understand the reasons of these successes and how best these lessons can be implemented to prevent further proliferation. For most scholars, there has long been a broad consensus that the NPT either has failed or is on the verge of failure. It is long been argued that the treaty will inevitably collapse resulting in a proliferation cascade. The consistency in these pessimistic predictions is remarkable. Such predictions were most frequent in the aftermath of each proliferation crises. India’s nuclear test in 1974, the Iraq revelations of a clandestine nuclear program in the early 1990s, the 1998 South Asian nuclear tests, the discovery of the A. Q. Khan network, the North Korean withdrawal from the treaty and most recently the controversy regarding Iran’s nuclear program, have generated a large scale analysis about the demise of the treaty and/or a wave of new weapons states.

#### More broadly, the non-proliferation regime is the lynchpin of hegemony

Gavin 15 [Francis Gavin (first Frank Stanton Chair in Nuclear Security Policy Studies and Professor of Political Science at the Massachusetts Institute of Technology), "Strategies of Inhibition: U.S. Grand Strategy, the Nuclear Revolution, and Nonproliferation," International Security, Summer 2015] AZ

* influence allies and deter enemies
* miscalc 🡪 war
* entangles US in unwanted conflicts
* tipping points 🡪 nuclear cascade

The objective of the United States' strategies of inhibition was and remains simple: to prevent other states—regardless of their political affiliation or orientation—from developing or acquiring independent nuclear forces, and when this effort fails, to reverse or mitigate the consequences of proliferation. Across different administrations and changing international circumstances, the United States has shown itself willing to pay a very high price to achieve these ends. When it is unable to stop proliferation, it works hard to prevent the proliferator from undertaking policies—weaponization, pursuit of a missile capability, and especially nuclear testing—that would increase the pressure on other states to acquire nuclear weapons. The United States is also more willing to countenance nuclear weapons programs, such as Great Britain's, that become dependent on and are coordinated with U.S. nuclear systems.33

Why has the United States been so interested in preventing states from possessing independent nuclear forces? Many international relations scholars argue that the spread of nuclear weapons can stabilize world politics.34 Nuclear weapons, they contend, have little effectiveness for anything but deterrence.35 These analysts are often perplexed by or critical of U.S. efforts to halt nuclear proliferation, and wonder if policymakers understand how nuclear deterrence works. Even those analysts who do not support nuclear proliferation are puzzled by the high price of strategies the United States has employed to prevent it.

These scholars miss a fundamental point: historically, U.S. policymakers have demonstrated less enthusiasm than the conventional wisdom suggests for the supposedly stabilizing aspects of nuclear weapons for international relations. Of far greater concern has been the worry over how other countries might use nuclear weapons against the United States. The strategies of inhibition were developed to stem the power-equalizing effects of nuclear weapons and have been motivated by the desire of the United States to safeguard its security and preserve its dominant power. As U.S. Secretary of State Dean Rusk pointed out, “It was almost in the nature of nuclear weapons that if someone had them, he did not want others to have them.”36

There are seven interrelated elements driving the United States' strategies of inhibition. They are motivated by the goal to protect the United States from nuclear attack and/or the desire to maintain U.S. freedom of action to pursue other strategic goals.

First, the United States has feared nuclear weapons being used against it, either through a deliberate nuclear attack or an accidental launch. The higher the number of states that possess nuclear weapons, the greater the risk the United States might be hit. Given the horrific consequences of an attack, American decisionmakers have considered it their responsibility to decrease this danger by limiting proliferation and its consequences. As U.S. Secretary of State John Foster Dulles told his Soviet counterpart, Andrei Gromyko, it was “frightening to think of a world where anybody could have a bomb.”37

Second, given the difficulty of identifying where a nuclear attack may have originated, U.S. policymakers worry about the catalytic or “detonator” consequences of proliferation; in other words, they fear that an independent nuclear state might threaten to use or actually employ a nuclear weapon to draw the United States into a conflict in which it did not want to become involved.38 There is evidence that Pakistan, South Africa, Israel, and possibly France pursued nuclear strategies aimed at pulling an otherwise unwilling United States into crises on their behalf.39 A 1962 top-secret study explained this fear: the “Nth country problem” might generate “the danger of major war being ‘catalyzed,’ deliberately or inadvertently, by the possessors of nuclear weapons outside the control of the major alliances.”40

Third, the United States has worried about the emergence of nuclear tipping points or nuclear dominoes, whereby one key state acquiring a nuclear capability might lead four or five other states to do the same.41 After the People's Republic of China tested a nuclear device in 1964, for example, President Lyndon Johnson's Committee on Nuclear Proliferation (also known as the Gilpatric Committee) warned: “The world is fast approaching a point of no return in the prospects of controlling the spread of nuclear weapons.”42 Not only would “proliferation cascades” increase the number of nuclear states in the world, with all the dangers that this could bring; it could also increase tensions and dangers in parts of the world the United States has considered important. Furthermore, it could drive U.S. allies—for example, Japan and South Korea—to target each other in ways inimical to the United States' interests.43

Fourth, U.S. policymakers have fully appreciated the power of nuclear deterrence, but have feared that nuclear weapons could be used to deter the United States and limit its freedom of action, both regionally and in the world at large.44 From the beginning of the nuclear age, the United States recognized the potential for nuclear weapons to become the great equalizer, “weapons of the weak,” allowing states with far inferior conventional, economic, and other forms of power to prevent it from doing what it wants. In the words of the Gilpatric Committee report, “As additional nations obtained nuclear weapons, our diplomatic and military influence would wane, and strong pressures would arise to retreat to isolation to avoid the risk of involvement in nuclear war.”45 And as Michael Horowitz explains, a feeble state “possessing even a single nuclear weapon influences America's strategic calculations and seems to make coercive success harder.”46

Fifth, it is easier to control allies that do not have their own nuclear weapons and that depend on the United States for their security. The United States has bristled at the independent policies that nuclear-armed allies such as France and Israel have pursued, often against its wishes. A Germany, Taiwan, Japan, or South Korea with nuclear weapons might be more likely to challenge the regional or international status quo with threats or the use of force in ways inimical to U.S. interests. President John F. Kennedy, for example, warned that if U.S. allies acquired nuclear weapons, “they would be in a position to be entirely independent and we might be on the outside looking in.”47

Sixth, U.S. policymakers have feared that otherwise weak adversaries might become emboldened to act aggressively if they acquired nuclear weapons.48 And given the nature of nuclear weapons—where the absolute number a state possesses may be less important than its willingness to use them—small nuclear-armed states might even try to coerce the United States during a crisis.49 As Secretary of State Dulles lamented to his Soviet counterpart, “A dictator could use the bombs to blackmail the rest of the world.”50 And in 1962, a government report suggested that “[c]oping with the possessors of a small, extortionate deterrent force will require the mastery of some new political-military techniques.”51 Finally, containing nuclear states is far more expensive than containing nonnuclear states.52

Seventh, although dozens of states could potentially build a nuclear weapon, U.S. policymakers remain concerned that only great powers possess the economic, technological, and bureaucratic capacities to build robust command, control, communications, and intelligence capabilities and to keep their weapons safe and secure.53 This concern matters for two reasons. First, small and weak nuclear states could disintegrate and lose control of their weapons, including to substate actors and terrorists.54 As Chairman of the U.S. Joint Chiefs of Staff Adm. Michael Mullen revealed about Pakistan's nuclear program, “I worry a great deal about those weapons falling into the hands of terrorists and either being proliferated or potentially used. And so, control of those, stability, stable control of those weapons is a key concern.”55 Second, the United States might be forced to politically support—against its other interests—otherwise problematic, weak nuclear states to forestall the dangers their instability might bring. When the Cold War ended, for example, the United States decided not to encourage the breakup of the Soviet Union—the preferred geostrategic choice of the George H.W. Bush administration—because of fears over nuclear security, safety, and proliferation. As President Bush and his national security adviser, Brent Scowcroft, lamented, administration officials “decided they would prefer to see weapons in the hands of just one entity, which had the stability and experience to secure them.”56

As the greatest power in the international system seeking to maintain its security and pursue its freedom of action in the world, the United States found these challenges intolerable. The strategies of inhibition were natural, if difficult, costly, and often destabilizing, responses. For all of these reasons, the purportedly peace-inducing qualities of nuclear weapons typically took a back seat to American policymakers' fears about the effect of nuclear proliferation on U.S. national interests. The United States worked hard to inhibit the spread of independent nuclear weapons programs and mitigate the consequences of proliferation when it could not be stopped.2

#### US leadership prevents great power war and existential governance crises

Brooks, Ikenberry, and Wohlforth ’13 (Stephen, Associate Professor of Government at Dartmouth College, John Ikenberry is the Albert G. Milbank Professor of Politics and International Affairs at Princeton University in the Department of Politics and the Woodrow Wilson School of Public and International Affairs, William C. Wohlforth is the Daniel Webster Professor in the Department of Government at Dartmouth College “Don’t Come Home America: The Case Against Retrenchment,” International Security, Vol. 37, No. 3 (Winter 2012/13), pp. 7–51)

A core premise of deep engagement is that it prevents the emergence of a far more dangerous global security environment. For one thing, as noted above, the United States’ overseas presence gives it the leverage to restrain partners from taking provocative action. Perhaps more important, its core alliance commitments also deter states with aspirations to regional hegemony from contemplating expansion and make its partners more secure, reducing their incentive to adopt solutions to their security problems that threaten others and thus stoke security dilemmas. The contention that engaged U.S. power dampens the baleful effects of anarchy is consistent with influential variants of realist theory. Indeed, arguably the scariest portrayal of the war-prone world that would emerge absent the “American Pacifier” is provided in the works of John Mearsheimer, who forecasts dangerous multipolar regions replete with security competition, arms races, nuclear proliferation and associated preventive war temptations, regional rivalries, and even runs at regional hegemony and full-scale great power war. 72 How do retrenchment advocates, the bulk of whom are realists, discount this benefit? Their arguments are complicated, but two capture most of the variation: (1) U.S. security guarantees are not necessary to prevent dangerous rivalries and conflict in Eurasia; or (2) prevention of rivalry and conflict in Eurasia is not a U.S. interest. Each response is connected to a different theory or set of theories, which makes sense given that the whole debate hinges on a complex future counterfactual (what would happen to Eurasia’s security setting if the United States truly disengaged?). Although a certain answer is impossible, each of these responses is nonetheless a weaker argument for retrenchment than advocates acknowledge. The first response flows from defensive realism as well as other international relations theories that discount the conflict-generating potential of anarchy under contemporary conditions. 73 Defensive realists maintain that the high expected costs of territorial conquest, defense dominance, and an array of policies and practices that can be used credibly to signal benign intent, mean that Eurasia’s major states could manage regional multipolarity peacefully without the American pacifier. Retrenchment would be a bet on this scholarship, particularly in regions where the kinds of stabilizers that nonrealist theories point to—such as democratic governance or dense institutional linkages—are either absent or weakly present. There are three other major bodies of scholarship, however, that might give decisionmakers pause before making this bet. First is regional expertise. Needless to say, there is no consensus on the net security effects of U.S. withdrawal. Regarding each region, there are optimists and pessimists. Few experts expect a return of intense great power competition in a post-American Europe, but many doubt European governments will pay the political costs of increased EU defense cooperation and the budgetary costs of increasing military outlays. 74 The result might be a Europe that is incapable of securing itself from various threats that could be destabilizing within the region and beyond (e.g., a regional conflict akin to the 1990s Balkan wars), lacks capacity for global security missions in which U.S. leaders might want European participation, and is vulnerable to the influence of outside rising powers. What about the other parts of Eurasia where the United States has a substantial military presence? Regarding the Middle East, the balance begins to swing toward pessimists concerned that states currently backed by Washington— notably Israel, Egypt, and Saudi Arabia—might take actions upon U.S. retrenchment that would intensify security dilemmas. And concerning East Asia, pessimism regarding the region’s prospects without the American pacifier is pronounced. Arguably the principal concern expressed by area experts is that Japan and South Korea are likely to obtain a nuclear capacity and increase their military commitments, which could stoke a destabilizing reaction from China. It is notable that during the Cold War, both South Korea and Taiwan moved to obtain a nuclear weapons capacity and were only constrained from doing so by a still-engaged United States. 75 The second body of scholarship casting doubt on the bet on defensive realism’s sanguine portrayal is all of the research that undermines its conception of state preferences. Defensive realism’s optimism about what would happen if the United States retrenched is very much dependent on its particular—and highly restrictive—assumption about state preferences; once we relax this assumption, then much of its basis for optimism vanishes. Specifically, the prediction of post-American tranquility throughout Eurasia rests on the assumption that security is the only relevant state preference, with security defined narrowly in terms of protection from violent external attacks on the homeland. Under that assumption, the security problem is largely solved as soon as offense and defense are clearly distinguishable, and offense is extremely expensive relative to defense. Burgeoning research across the social and other sciences, however, undermines that core assumption: states have preferences not only for security but also for prestige, status, and other aims, and they engage in trade-offs among the various objectives. 76 In addition, they define security not just in terms of territorial protection but in view of many and varied milieu goals. It follows that even states that are relatively secure may nevertheless engage in highly competitive behavior. Empirical studies show that this is indeed sometimes the case. 77 In sum, a bet on a benign postretrenchment Eurasia is a bet that leaders of major countries will never allow these nonsecurity preferences to influence their strategic choices. To the degree that these bodies of scholarly knowledge have predictive leverage, U.S. retrenchment would result in a significant deterioration in the security environment in at least some of the world’s key regions. We have already mentioned the third, even more alarming body of scholarship. Offensive realism predicts that the withdrawal of the American pacifier will yield either a competitive regional multipolarity complete with associated insecurity, arms racing, crisis instability, nuclear proliferation, and the like, or bids for regional hegemony, which may be beyond the capacity of local great powers to contain (and which in any case would generate intensely competitive behavior, possibly including regional great power war). Hence it is unsurprising that retrenchment advocates are prone to focus on the second argument noted above: that avoiding wars and security dilemmas in the world’s core regions is not a U.S. national interest. Few doubt that the United States could survive the return of insecurity and conflict among Eurasian powers, but at what cost? Much of the work in this area has focused on the economic externalities of a renewed threat of insecurity and war, which we discuss below. Focusing on the pure security ramifications, there are two main reasons why decisionmakers may be rationally reluctant to run the retrenchment experiment. First, overall higher levels of conflict make the world a more dangerous place. Were Eurasia to return to higher levels of interstate military competition, one would see overall higher levels of military spending and innovation and a higher likelihood of competitive regional proxy wars and arming of client states—all of which would be concerning, in part because it would promote a faster diffusion of military power away from the United States. Greater regional insecurity could well feed proliferation cascades, as states such as Egypt, Japan, South Korea, Taiwan, and Saudi Arabia all might choose to create nuclear forces. 78 It is unlikely that proliferation decisions by any of these actors would be the end of the game: they would likely generate pressure locally for more proliferation. Following Kenneth Waltz, many retrenchment advocates are proliferation optimists, assuming that nuclear deterrence solves the security problem. 79 Usually carried out in dyadic terms, the debate over the stability of proliferationchanges as the numbers go up. Proliferation optimism rests on assumptions of rationality and narrow security preferences. In social science, however, such assumptions are inevitably probabilistic. Optimists assume that most states are led by rational leaders, most will overcome organizational problems and resist the temptation to preempt before feared neighbors nuclearize, and most pursue only security and are risk averse. Confidence in such probabilistic assumptions declines if the world were to move from nine to twenty, thirty, or forty nuclear states. In addition, many of the other dangers noted by analysts who are concerned about the destabilizing effects of nuclear proliferation—including the risk of accidents and the prospects that some new nuclear powers will not have truly survivable forces—seem prone to go up as the number of nuclear powers grows. 80 Moreover, the risk of “unforeseen crisis dynamics” that could spin out of control is also higher as the number of nuclear powers increases. Finally, add to these concerns the enhanced danger of nuclear leakage, and a world with overall higher levels of security competition becomes yet more worrisome. The argument that maintaining Eurasian peace is not a U.S. interest faces a second problem. On widely accepted realist assumptions, acknowledging that U.S. engagement preserves peace dramatically narrows the difference between retrenchment and deep engagement. For many supporters of retrenchment, the optimal strategy for a power such as the United States, which has attained regional hegemony and is separated from other great powers by oceans, is offshore balancing: stay over the horizon and “pass the buck” to local powers to do the dangerous work of counterbalancing any local rising power. The United States should commit to onshore balancing only when local balancing is likely to fail and a great power appears to be a credible contender for regional hegemony, as in the cases of Germany, Japan, and the Soviet Union in the midtwentieth century. The problem is that China’s rise puts the possibility of its attaining regional hegemony on the table, at least in the medium to long term. As Mearsheimer notes, “The United States will have to play a key role in countering China, because its Asian neighbors are not strong enough to do it by themselves.” 81 Therefore, unless China’s rise stalls, “the United States is likely to act toward China similar to the way it behaved toward the Soviet Union during the Cold War.” 82 It follows that the United States should take no action that would compromise its capacity to move to onshore balancing in the future. It will need to maintain key alliance relationships in Asia as well as the formidably expensive military capacity to intervene there. The implication is to get out of Iraq and Afghanistan, reduce the presence in Europe, and pivot to Asia— just what the United States is doing. 83 In sum, the argument that U.S. security commitments are unnecessary **for peace** is countered by a lot of scholarship, including highly influential realist scholarship. In addition, the argument that Eurasian peace is unnecessary for U.S. security is weakened by the potential for a large number of nasty security consequences as well as the need to retain a latent onshore balancing capacity that dramatically reduces the savings retrenchment might bring. Moreover, switching between offshore and onshore balancing could well be difªcult. Bringing together the thrust of many of the arguments discussed so far underlines the degree to which the case for retrenchment misses the underlying logic of the deep engagement strategy. By supplying reassurance, deterrence, and active management, the United States lowers security competition in the world’s key regions, thereby preventing the emergence of a hothouse atmosphere for growing new military capabilities. Alliance ties dissuade partners from ramping up and also provide leverage to prevent military transfers to potential rivals. On top of all this, the United States’ formidable military machine may deter entry by potential rivals. Current great power military expenditures as a percentage of GDP are at historical lows, and thus far other major powers have shied away from seeking to match top-end U.S. military capabilities. In addition, they have so far been careful to avoid attracting the “focused enmity” of the United States. 84 All of the world’s most modern militaries are U.S. allies (America’s alliance system of more than sixty countries now accounts for some 80 percent of global military spending), and the gap between the U.S. military capability and that of potential rivals is by many measures growing rather than shrinking. 85

### 1AC – Accidents

#### Accidents likely – large releases of radiation are more likely than before

Wheatley et al 16 [Spencer Wheatley (ETH Zurich, Department of Management, Technology and Economics, Switzerland), Benjamin Sovacool, Didier Sornette, "Of Disasters and Dragon Kings: A Statistical Analysis of Nuclear Power Incidents and Accidents," Risk Analysis, March 2016] AZ

Regarding event severity, we found that the distribution of cost underwent a significant regime change shortly after the Three Mile Island major accident. Moderate cost events were suppressed, but extreme ones became more frequent, to the extent that the costs are now well described by the extremely heavy tailed Pareto distribution with parameter inline image. We noted in the introduction that the Three Mile Island accident in 1979 led to plant-specific full-scope control room simulators, plant-specific PSA models for finding and eliminating risks, and new sets of emergency operating instructions. The change of regime that we document here may be the concrete embodiment of these changes catalyzed by the TMI accident. We also identify statistically significant runaway disaster (“dragon-king”) regimes in both NAMS and cost, suggesting that extreme events are amplified to values even larger than those explained under the Pareto distribution with inline image. In view of the extreme risks, the need for better bonding and liability instruments associated with nuclear accident and incident property damage becomes clear. For instance, under the conservative assumption that the cost from Fukushima is the maximum possible, annual accident costs are on par with the construction costs of a single nuclear plant, with the expected annual cost being 1.5 billion USD with a standard deviation of 8 billion USD. If we do not limit the maximum possible cost, then the expected cost under the estimated Pareto model is mathematically infinite. Nuclear reactors are thus assets that can become liabilities in a matter of hours, and it is usually taxpayers, or society at large, that “pays” for these accidents rather than nuclear operators or even electricity consumers. This split of incentives improperly aligns those most responsible for an accident (the principals) from those suffering the cost of nuclear accidents (the agents). One policy suggestion is that we start holding plant operators liable for accident costs through an environmental or accident bonding system,[65] which should work together with an appropriate economic model to incentivize the operators. Third, looking to the future, our analysis suggests that nuclear power has inherent safety risks that will likely recur. With the current model—which does not quantify improvements from the industry response to Fukushima—in terms of costs, there is a 50% chance that (i) a Fukushima event (or larger) occurs in 62 years, and (ii) a TMI event (or larger) occurs in 15 years. Further, smaller but still expensive (⩾20 MM 2013 USD) incidents will occur with a frequency of about one per year, under the assumption of a roughly constant fleet of nuclear plants. To curb these risks of future events would require sweeping changes to the industry, as perhaps triggered by Fukushima, which include refinements to reactor operator training, human factors engineering, radiation protection, and many other areas of nuclear power plant operations. To be effective, any changes need to minimize the risk of extreme disasters. Unfortunately, given the shortage of data, it is too early to judge if the risk of events has significantly improved post-Fukushima. We can only raise attention to the fact that similar sweeping regime changes after both Chernobyl (leading to a decrease in frequency) and Three Mile Island (leading to a suppression of moderate events) failed to mitigate the very heavy tailed distribution of costs documented here.

#### Contamination spreads rapidly – no one is safe

Max - Planck- Gesselschaft 12 –The Max Planck Society for the Advancement of Science is a formally independent non-governmental and non-profit association of German research institute (Max-Planck-Gesellschaft, Major Reactor, 5-22-2012, "Severe nuclear reactor accidents likely every 10 to 20 years, European study suggests," ScienceDaily, https://www.sciencedaily.com/releases/2012/05/120522134942.htm) RMT

25 percent of the radioactive particles are transported further than 2,000 kilometres

Subsequently, the researchers determined the geographic distribution of radioactive gases and particles around a possible accident site using a computer model that describes Earth's atmosphere. The model calculates meteorological conditions and flows, and also accounts for chemical reactions in the atmosphere. The model can compute the global distribution of trace gases, for example, and can also simulate the spreading of radioactive gases and particles. To approximate the radioactive contamination, the researchers calculated how the particles of radioactive caesium-137 (137Cs) disperse in the atmosphere, where they deposit on Earth's surface and in what quantities. The 137Cs isotope is a product of the nuclear fission of uranium. It has a half-life of 30 years and was one of the key elements in the radioactive contamination following the disasters of Chernobyl and Fukushima.

The computer simulations revealed that, on average, only eight percent of the 137Cs particles are expected to deposit within an area of 50 kilometres around the nuclear accident site. Around 50 percent of the particles would be deposited outside a radius of 1,000 kilometres, and around 25 percent would spread even further than 2,000 kilometres. These results underscore that reactor accidents are likely to cause radioactive contamination well beyond national borders.

The results of the dispersion calculations were combined with the likelihood of a nuclear meltdown and the actual density of reactors worldwide to calculate the current risk of radioactive contamination around the world. According to the International Atomic Energy Agency (IAEA), an area with more than 40 kilobecquerels of radioactivity per square meter is defined as contaminated.

The team in Mainz found that in Western Europe, where the density of reactors is particularly high, the contamination by more than 40 kilobecquerels per square meter is expected to occur once in about every 50 years. It appears that citizens in the densely populated southwestern part of Germany run the worldwide highest risk of radioactive contamination, associated with the numerous nuclear power plants situated near the borders between France, Belgium and Germany, and the dominant westerly wind direction.

If a single nuclear meltdown were to occur in Western Europe, around 28 million people on average would be affected by contamination of more than 40 kilobecquerels per square meter. This figure is even higher in southern Asia, due to the dense populations. A major nuclear accident there would affect around 34 million people, while in the eastern USA and in East Asia this would be 14 to 21 million people.

"Germany's exit from the nuclear energy program will reduce the national risk of radioactive contamination. However, an even stronger reduction would result if Germany's neighbours were to switch off their reactors," says Jos Lelieveld. "Not only do we need an in-depth and public analysis of the actual risks of nuclear accidents. In light of our findings I believe an internationally coordinated phasing out of nuclear energy should also be considered ," adds the atmospheric chemist.

#### It’s the single greatest danger to the environment

Stapleton 9 - Richard M Stapleton Is the author of books such as Lead Is a Silent Hazard, writes for pollution issues (“Disasters: Nuclear Accidents” <http://www.pollutionissues.com/Co-Ea/Disasters-Nuclear-Accidents.html>) RMT

Of all the environmental disaster events that humans are capable of causing, nuclear disasters have the greatest damage potential. The radiation release associated with a nuclear disaster poses significant acute and chronic risks in the immediate environs and chronic risk over a wide geographic area. Radioactive contamination, which typically becomes airborne, is long-lived, with half-lives guaranteeing contamination for hundreds of years.

Concerns over potential nuclear disasters center on nuclear reactors, typically those used to generate electric power. Other concerns involve the transport of nuclear waste and the temporary storage of spent radioactive fuel at nuclear power plants. The fear that terrorists would target a radiation source or create a "dirty bomb" capable of dispersing radiation over a populated area was added to these concerns following the 2001 terrorist attacks on New York City and Washington, D.C.

Radioactive emissions of particular concern include strontium-90 and cesium-137, both having thirty-year-plus half-lives, and iodine-131, having a short half-life of eight days but known to cause thyroid cancer. In addition to being highly radioactive, cesium-137 is mistaken for potassium by living organisms. This means that it is passed on up the food chain and bioaccumulated by that process. Strontium-90 mimics the properties of calcium and is deposited in bones where it may either cause cancer or damage bone marrow cells.

#### Biodiversity loss risks extinction - ecosystems aren’t resilient or redundant

Vule 13-School of Biological Sciences, Louisiana Tech University (Jeffrey V. Yule \*, Robert J. Fournier and Patrick L. Hindmarsh, “Biodiversity, Extinction, and Humanity’s Future: The Ecological and Evolutionary Consequences of Human Population and Resource Use”, 2 April 2013, manities 2013, 2, 147–159) RMT

Ecologists recognize that the particulars of the relationship between biodiversity and community resilience in the face of disturbance (a broad range of phenomena including anything from drought, fire, and volcanic eruption to species introductions or removals) depend on context [16,17]. Sometimes disturbed communities return relatively readily to pre-disturbance conditions; sometimes they do not. However, accepting as a general truism that biodiversity is an ecological stabilizer is sensible— roughly equivalent to viewing seatbelt use as a good idea: although seatbelts increase the risk of injury in a small minority of car accidents, their use overwhelmingly reduces risk. As humans continue to modify natural environments, we may be reducing their ability to return to pre-disturbance conditions. The concern is not merely academic. Communities provide the ecosystem services on which both human and nonhuman life depends, including the cycling of carbon dioxide and oxygen by photosynthetic organisms, nitrogen fixation and the filtration of water by microbes, and pollination by insects. If disturbances alter communities to the extent that they can no longer provide these crucial services, extinctions (including, possibly, our own) become more likely. In ecology as in science in general, absolutes are rare. Science deals mainly in probabilities, in large part because it attempts to address the universe’s abundant uncertainties. Species-rich, diverse communities characterized by large numbers of multi-species interactions are not immune to being pushed from one relatively stable state characterized by particular species and interactions to other, quite different states in which formerly abundant species are entirely or nearly entirely absent. Nonetheless, in speciose communities, the removal of any single species is less likely to result in radical change. That said, there are no guarantees that the removal of even a single species from a biodiverse community will not have significant, completely unforeseen consequences.

Indirect interactions can be unexpectedly important to community structure and, historically, have been difficult to observe until some form of disturbance (especially the introduction or elimination of a species) occurs. Experiments have revealed how the presence of predators can increase the diversity of prey species in communities, as when predators of a superior competitor among prey species will allow inferior competing prey species to persist [18]. Predators can have even more dramatic effects on communities. The presence or absence of sea otters determines whether inshore areas are characterized by diverse kelp forest communities or an alternative stable state of species poor urchin barrens [19]. In the latter case, the absence of otters leaves urchin populations unchecked to overgraze kelp forests, eliminating a habitat feature that supports a wide range of species across a variety of age classes.

Aldo Leopold observed that when trying to determine how a device works by tinkering with it, the first rule of doing the job intelligently is to save all the parts [20]. The extinctions that humans have caused certainly represent a significant problem, but there is an additional difficulty with human investigations of and impacts on ecological and evolutionary processes. Often, our tinkering is unintentional and, as a result, recklessly ignores the necessity of caution. Following the logic inherited from Newtonian physics, humans expect single actions to have single effects. Desiring more game species, for instance, humans typically hunt predators (in North America, for instance, extirpating wolves so as to be able to have more deer or elk for themselves). Yet removing or adding predators has far reaching effects. Wolf removal has led to prey overpopulation, plant over browsing, and erosion [21]. After wolves were removed from Yellowstone National Park, the K of elk increased. This allowed for a shift in elk feeding patterns that left fewer trees alongside rivers, thus leaving less food for beaver and, consequently, fewer beaver dams and less wetland [22,23]. Such a situation represents, in microcosm, the inherent risk of allowing for the erosion of species diversity. In addition to providing habitat for a wide variety of species, wetlands serve as natural water purification systems. Although the Yellowstone region might not need that particular ecosystem service as much as other parts of the world, freshwater resources and wetlands are threatened globally, and the same logic of reduced biodiversity equating to reduced ecosystem services applies.

Humans take actions without considering that when tugging on single threads, they unavoidably affect adjacent areas of the tapestry. While human population and per capita resource use remain high, so does the probability of ongoing biodiversity loss. At the very least, in the future people will have an even more skewed perspective than we do about what constitutes a diverse community. In that regard, future generations will be even more ignorant than we are. Of course, we also experience that shifting baseline perspective on biodiversity and population sizes, failing to recognize how much is missing from the world because we are unaware of what past generations saw [11]. But the consequences of diminished biodiversity might be more profound for humans than that. If the disturbance of communities and ecosystems results in species losses that reduce the availability of ecosystem services, human K and, sooner or later, human N will be reduced.

## Prolif

### 1AR OV

### A2 Power =/= Prolif

#### Expanding nuclear power expands proliferation risks.

Michael Mariotte, Executive Director, **Nuclear Information and Resource Service**, May 2008, False Promises, <http://www.nirs.org/falsepromises.pdf>

There is an inextricable link between nuclear power and nuclear weapons. The technology for producing nuclear fuel is the same technology used to produce nuclear weapons materials. Proliferation-resistant technologies provide some barriers to proliferation, but there is no proliferation-free nuclear technology. Reprocessing and enrichment activities cannot be safeguarded and international treaty obligations are clearly not enforceable. The associated dangers cannot be overstated. In fact, a high level panel of international experts convened by the United Nations Secretary General, identified nuclear proliferation as the number one threat to the international community, warning of “a real danger that we could see a cascade of nuclear proliferation in the near future.”214 The panel recommended the implementation of firm and urgent measures to reduce the risk of a nuclear attack, whether by State or non-State actors, and recommended States to “forego the development of domestic uranium enrichment and reprocessing facilities.”215 Likewise, former Vice-President Al Gore has also expressed his concerns regarding proliferation risks associated with civilian programs: “For eight years in the White House, every weapons-proliferation problem we dealt with was connected to a civilian reactor program. And if we ever got to the point where we wanted to use nuclear reactors to back out a lot of coal —which is the real issue: coal—then we’d have to put them in so many places we’d run that proliferation risk right off the reasonability scale.” Reactor-grade plutonium is weapons-usable Plutonium exists only in trace amounts in nature and it is generated as a by-product of nuclear reactor operations as part of the spent fuel mix. Under normal operating conditions, reactors produce low concentrations of plutonium-239, the isotope most useful for nuclear weapons. However, even if reactorgrade plutonium is not the most convenient isotope to effectively build a nuclear bomb, it can nevertheless be used to make weapons. According to the DOE, “Virtually any combination of plutonium isotopes… can be used to make a nuclear weapon. […] In short, reactor-grade plutonium is weapons-usable, whether by unsophisticated proliferators or by advanced nuclear weapon states.”

### A2 Civilian Distinct

#### All tech is dual use

### A2 Institutions Check

#### No checks – NPT failing now

#### No checks – nuclear material is untraceable

Higgin 6 [Davida Higgin, "The links between nuclear power = and nuclear weapons," CND Briefing, April 2006] AZ

Transfers between civil and military stockpiles are virtually impossible to track. Although the IAEA is charged with investigating this, their powers are in practice limited. The U.K. government, for example, has admitted that its agreement to inspections “was not intended to provide an assurance ... that material from the civil nuclear programme would not be used for defence purposes”. (6) Under the safeguards agreement, Britain could at any time withdraw any nuclear materials from safeguards “for national security reasons” (7) Plainly “...although the British government have repeatedly insisted that they have no current plans to divert civil material to military uses, they could at any point in the future change their mind - and there would be no IAEA safeguards to stop them.” (8) Even in countries (like the U.S., Britain and France) where safe and secure storage is a high and achievable priority, there are unaccountable discrepancies of plutonium. In Russia, since the break up of the Soviet Union, there are all too well-known problems of permeable storage, poor management, theft and smuggling, and Russia is not alone in this. It has been suggested that all plutonium, including military, should be put under the supervision of the IAEA, but all that has actually been done is that the civil material of some 140 (mainly non-weapons-states) is inspected.

### A2 Nuclear Taboo

#### Nuclear taboo doesn't check – it's weak and is overwhelmed by security incentives

Burr & Kimball 15 [William Burr (senior analyst at George Washington University's National Security Archive and the co-author of Nixon’s Nuclear Specter: The Secret Alert of 1969, Madman Diplomacy, and the Vietnam War) and Jeffrey Kimball, "Seven decades after Hiroshima, is there still a nuclear taboo?," Bulletin of the Atomic Scientists, 8/4/2015] AZ

Nuclear powers continue to make nuclear threats. Recently, Russian officials and Pakistan have said they would use their weapons if they deemed it necessary. At the same time, the United States appears to be entering a period of expanded nuclear budgets, in part because a critical mass of Pentagon planners still embrace outdated Cold War nuclear strategies, including that of first strike, in which the goal is to preemptively attack the opposing nation’s arsenal in order to diminish or destroy its ability to retaliate. The Congressional Budget Office estimates that the United States is planning to spend $348 billion to maintain and modernize its nuclear arsenal over the next 10 years—an amount so great that it would establish (or strengthen) strong vested interests against abolition or even meaningful reduction. With prospects for US and Russian nuclear arms reductions at a standstill, the White House has not yet sought to rein in these exorbitant spending plans.

Citing nuclear competition with China and Russia, which are both modernizing their nuclear forces, the Pentagon justifies its budget goals with language and scenarios straight out of the Cold War. Joint Chiefs of Staff Vice Chairman James Winnefeld Jr. recently said to the House Armed Services Committee that Russian plans for mobile, land-based ICBMs worried him because they “would be hard for us to hit in a first strike.” This statement is cause for concern because it shows that the Joint Chiefs of Staff believes there might come a time when the United States would want to launch a first strike.

Seventy years after the destruction of Hiroshima and Nagasaki, nuclear weapons remain in a special category, in which their use is narrowly circumscribed. They have become unusable except in the most unlikely circumstances, and their value as a deterrent lacks credibility because of the catastrophic dangers of mass and mutual destruction. US presidents since Truman have come to realize that nuclear war is unwinnable.

Nonetheless, they have built up and to this day maintain forces that far exceed any calculation of what it requires to deter a nuclear attack. Today, the United States still has about 2,080 deployed nuclear warheads and Russia has some 1,780. Many of these weapons are primed for prompt launch and can reach their targets within 25 minutes. If these weapons were used even in a “limited” way, the result would be catastrophic nuclear devastation. This suggests that while the nuclear taboo still exists, the non-use legacy is at risk as long as defense officials in Russia and the United States continue to think and act in irresponsible Cold War terms, and the US Senate refuses to ratify international restrictions on nuclear testing. As powerful a restraint as the taboo has been and may still be, complacency is foolhardy.

#### The taboo doesn't assume miscalc – even a single nuclear launch would break the taboo and permanently alter the structure of deterrence

#### [A2 DETERRENCE] This answers their deterrence arg – if states KNOW that other states won't launch nukes due to the taboo, then deterrence is ruined since MAD is based on the belief that the other side will retaliate

### A2 Deterrence – TL

#### [PREVENTIVE STRIKES] Deterrence doesn't apply to preventive strikes – states afraid of their neighbors proliferating will launch an all-out conventional or nuclear attack during the transition to wipe out nuclear facilities which causes draw-in

#### [BRINKSMANSHIP] Deterrence is dependent on the belief that other states will follow through on military commitments – that causes escalating conflicts since neither state wants to demonstrate weak resolve – Cuban Missile Crisis proves that deterrence encourages brinkmanship

#### Threats are probabilistic, not absolute – states can engage in processes that raise the RISK of crises but don't deliberately threaten war – that guarantees escalating conflict and miscalc

Powell 15 [Robert Powell (Robson Professor in the Department of Political Science at the University of California, Berkeley.), "Nuclear Brinkmanship, Limited War, and Military Power," International Organization, Summer 2015] AZ

Schelling’s notion of brinkmanship provided an explanation.15 Even if a state cannot credibly threaten to deliberately launch an all-out nuclear attack, it can credibly make “threats that leave something to chance.” That is, a state may be able to credibly threaten and actually engage in a process — a crisis or a limited war — that raises the risk that events will go out of control and end in a catastrophic nuclear exchange. How much risk a state could credibly threaten to run would depend on what was at stake in the political conflict. The higher the stakes, the more risk a state would be willing to run. In a brinkmanship crisis, states exert coercive pressure on each other by taking steps that raise the risk that events will go out of control. This is a real and shared risk that the confrontation will end in a catastrophic nuclear exchange. States do not bid up the risk eagerly or enthusiastically. Rather, a state faces a series of terrible choices throughout the conflict. A state can back down, or it can decide to hang on a little longer and accept a somewhat greater risk in the hope that its adversary will find the situation too dangerous and back down. If neither state backs down, the crisis continues with each state bidding up the risk until one state eventually finds the risk too high and backs down or until events actually do spiral out of control. It is important to be clear about what precisely is at risk in the “threats that leave something to chance.” Most narrowly, one can think of there being what Snyder and Diesing call an “autonomous” risk that the crisis will end in a large, counter-value, nuclear exchange without any national authority ordering such an attack.16 This is the most literal reading of the nature of the risk in Schelling’s description of brinkmanship in which two actors are tied together by a rope and standing near a brink. While neither can credibly threaten to push the other over the brink deliberately, “loose gravel, gusty winds, and a propensity toward dizziness” make it possible for “one to credibly threaten to fall off accidentally.”17 It is also the nature of the risk in Schelling’s use of a roll of adie to impose the disastrous outcome in other illustrations of brinkmanship.18 Another somewhat broader interpretation of what is at risk is also possible. Suppose there are situations such that if the states find themselves in one of these situations, then the states are sure to escalate and thereby incur very high costs.19 These costs could come through a process of deliberate decisions, inadvertence, or accident.20 Because the expected costs are so high for both states once they are in situations like this, neither state can credibly threaten to deliberately put itself or its adversary in this kind of situation. For example, no state can credibly threaten to deliberately cross another state’s nuclearuse threshold if the states believe the crises is sure to spiral out of control once this threshold has been crossed. However, the states can make threats that leave something to chance where what is left to chance is that the states would find themselves in this kind of situation unintentionally. For example, a state might inadvertently cross another’s nuclear threshold because of uncertainty surrounding the threshold.21

#### [MISCALC] Deterrence assumes that states have full knowledge of other countries intentions – it took the US decades to develop sufficient controls on nukes – new states have under-developed nuclear protocols, high trigger alert systems, and crude detection systems which increase risk of launching nukes on accident – that's Kroenig – deterrence doesn't check and even a limited strike would break the nuclear taboo and spark massive retaliation

#### [LIMITED STRIKE] Deterrence assumes mutually assured destruction, in which any nuclear strike would be total and ensure absolute destruction of both sides – however, a state may launch a limited strike under the belief that the other won't retaliate fully – that sparks escalating conflicts that culminate in a full retaliation

### A2 Deterrence – new states

#### [NO SECOND STRIKE] New states with nukes don't have second strike capability since their nuclear programs are small and easily targeted – that creates "use 'em or lose 'em" pressures to preempt an oncoming attack – even a limited first strike breaks the nuclear taboo and draws in other countries through retaliation

#### [MISCALC] New states are more vulnerable to miscalc – lack of resources, opaque programs, weak civil-military relations, hair-trigger launching, and domestic instability

Sagan 94 [Scott Sagan (Caroline S.G. Munro Professor of Political Science, the Mimi and Peter Haas University Fellow in Undergraduate Education, and Senior Fellow at the Center for International Security and Cooperation and the Freeman Spogli Institute at Stanford University), "The Perils of Proliferation," Stanford University, 1994] AZ

Waltz asked: why should we expect new nuclear states to experience grater difficulties than the old ones? The evidence of the number of near-accidents with U.S. nuclear weapons during the Cold War suggests that there would be reason enough to worry about nuclear accidents in new proliferant states even if their safety difficulties were “only” as great as those experienced by old nuclear powers. Unfortunately, there are also at least six reasons to expect that new nuclear states will face much greater risks of nuclear accidents. First, some emergent nuclear powers lack the organizational and financial resources to produce even minimal mechanical safety devices and safe-weapons design features. Al- though all countries may start with “crude nuclear arsenals,” in Waltz’s terms, the weapons of poorer states will likely be more crude, and will remain so for a longer period of time. Evidence for this prediction can be found in the case of the Iraqi nuclear-weapons program, as UN inspectors discovered soon after the 1991 Persian Gulf War: The inspectors found out one other thing about the Iraqi bomb [design] - it is highly unstable. The design calls for cramming so much weapon-grade uranium into the core, they say, that the bomb would inevitably be on the verge of going off - even while sitting on the workbench. ‘It could go off if a rifle bullet hit it,’ one inspector says, adding: ‘I wouldn’t want to be around if it fell off the edge of this desk.’99 Second, the “opaque” nature of nuclear proliferation in the contemporary world exacer- bates nuclear-weapons safety problems. Fearing the international diplomatic consequences of a public crossing of the nuclear threshold, most new proliferants have developed weapons capabilities in a covert manner. Israel, South Africa, Pakistan, and possibly North Korea fit this pattern. There are, however, both organizational and technical reasons to believe that this opaque path to nuclear-weapons status is inherently less safe: the tighter compartmen- talization of such programs means that there is likely to be less thorough monitoring of safety efforts; the lack of public debate about nuclear issues in such states increases the likelihood that military organizational interests will not be challenged; and the inability to have full-scale nuclear-weapons tests will inhibit safety design efforts.‘°° Third, accident-prone nuclear operations will be more prevalent in states with volatile civil-military relations because military officers, who have organizational biases in favor of maintaining high readiness for war, will be less constrained by more safety-conscious civilian authorities.” Pakistan is the most worrisome case in point. The Pakistan Air Force plans to use us. F-16 aircraft in nuclear-weapons delivery roles if necessary, and yet in 1992 former Director of Central Intelligence Robert Gates suggested that Pakistan had not perfected the electrical mechanisms to permit safe maintenance, transportation, and delivery of weapons by F4683“ The existence of such safety problems makes the reports that the Pakistani air force, without informing Prime Minister Bhutto, loaded nuclear weapons on its F-16 aircraft during the 1990 Kashmir crisis even more alarming than previously recognized.”3 Fourth, the tight-coupling problem will be significantly worse between most new proliferants, at the beginning of their experience in managing nuclear weapons, since they are in closer proximity to their expected adversaries than was the case between the United States and the Soviet Union. At the start of the Cold War, the superpowers had many hours to determine whether warnings were real or false during the strategic bomber era; later, in the 196os, they had approximately 30 minutes to react to reports of ICBM attacks; and only after many years of experience with nuclear arsenals did they have fewer than 10 minutes of warning time once missile submarines were deployed off each other’s coasts in the 19705. New and potential future nuclear rivals-Russia and Ukraine, India and Pakistan, North and South Korea-will immediately have very small margins of error, at the outset of nuclear rivalries, since they have contiguous borders. Moreover, the poorer of these states are likely to have less reliable warning systems trying to operate successfully in this more challenging environment. Fifth, although organizational learning about safe nuclear-weapons operations was far from perfect in the United States and the Soviet Union during the Cold War, it is likely to be even worse in states that inherited a full-scale nuclear arsenal without going through the incremental process of tests, exercises, and deployments. The emerging problems of nuclear safety in the Ukraine appear to be the product of its unusual status as an “instant” nuclear power. In September 1993, Major General Vitaly Yakovlev of the Russian Defense Ministry reported that a squad of Russian nuclear-warhead specialists had been sent to the Ukrainian nuclear-ammunition depot at Pervomaisk (170 miles south of Kiev) because increased radiation levels had been discovered inside the base. According to Moscow press reports, a subsequent investigation by Russian nuclear scientists determined that “Ukrainian storage depots were filled over capacity, necessary maintenance was not being carried out, rules for transporting warheads were being ignored and upvto-date safety systems were absent.”1°‘ In October 1993, Colonel General Yevgeny Maslin, chief of the Russian General Staff‘s nuclear ammunition department, reported that two nuclear warheads, which were emitting danger- ous levels of radioactivity, had been kept for two weeks inside a railroad car on the Ukraine- Russian border, because Ukrainian custom officials demanded payment for any nuclear weapons taken to Russia for dismantiement.‘°5 Such nuclear safety problems may be the first signs that serious dangers of nuclear-weapons accidents are looming in the Soviet successor states. slates. Sixth, serious political and social unrest is likely in the future in a number of the nuclear proliferants, which will significantly increase the risks of accidental and unauthorized weapons detonations. Waltz, in contrast, insists that domestic instability in new nuclear powers will not be a problem: What is hard to comprehend is why, in an internal struggle for power, any of the contenders should start using nuclear weapons. Who would they aim them at?...One or another nuclear state will experience uncertainty of succes- sion, fierce struggles for power, and instability of regime. Those who fear the worst have not shown with any plausibility how those expected events may lead to the use of nuclear weapons.‘06 21 This exclusive focus on deliberate uses of nuclear weapons is misleading, however, since severe domestic instability can produce accidental detonations under many plausible sce- narios. If a civil war in a new nuclear state leads to a firefight between rival military factions at a nuclear weapons base, the danger of an accidental detonation or spreading of plutonium would be severe.‘°’ If domestic unrest leads to severe economic hardships at military bases, disgruntled operators are more likely to engage in acts of sabotage, which could inadvert- ently or deliberately produce accidents. An example of the type of dangerous incident one should anticipate in future proliferators occurred in early 1992 at the lgnalina nuclear plant in Lithuania, where a programmer reported that he had found a virus in the computer that ran the safety systems for the plant. Investigators later believed, however, that he had placed the virus there himself in order to receive a pay bonus for improving safety.“ Finally, domestic political unrest can increase the risk of nuclear-weapons accidents by encouraging unsafe transportation, exercise, or testing operations. If warheads are moved out of unstable regions in haste (as occurred in the USSR in 1991) or if weapons tests are rushed to prevent rebellious military units from gaining access to the weapons (as occurred in Algeria in induced by domestic crises is Marshal Nie Rongzhen’s decision to launch a nest missile 800 kilometers across China with a live nuclear warhead onboard in October 1966 in the middle of the Cultural Revolution. Nie was apparently fully aware of the risks involved in such an unprecedented test, but believed that the nuclear-weapons program needed a dramatic and public sign of success as part of his “strategy of siding with the radicals to fend off radical penetration of the program.”“° In short, while there have been no major nuclear-weapons accidents in the new proliferators yet, there are good reasons to anticipate that the probabilities will be high over time. Any serious nuclear-weapons accident will have tragic consequences for the local community; and if an accidental detonation, false warning, or unauthorized use of a weapon leads to “mistaken retaliation” and accidental war, the consequences would be even more catastrophic. As long as would-be proliferators choose not to cross the final threshold of “weaponization” by actually deploying fully assembled nuclear weapons and launchers, these safety problems will largely remain dormant. Once these states begin to deploy arsenals, however, such organizational safety problems are likely to emerge with a ven- geance. The current safety record is likely to be the lull before the storm.

#### [POSTURING] Weak nuclear states are incentivized to REDUCE checks on nuclear escalation to increase the weight of their threats– that drastically increases the risk of miscalc

Powell 15 [Robert Powell (Robson Professor in the Department of Political Science at the University of California, Berkeley.), "Nuclear Brinkmanship, Limited War, and Military Power," International Organization, Summer 2015] AZ

These effects highlight in a very simple way some of the incentives a weak state has to “go nuclear” and thereby be able to transform a contest of strength into one of resolve. If a weak state has no nuclear weapons, it cannot threaten to engage in a process that may ultimately end in its launching a nuclear attack against its adversary. In other words, the potential and minimal risks are zero: ρ(π) = ρ(π)=0 for all π. Absent any risk of escalation, the stronger state brings all of its power to bear (π∗ = π). Nuclear weapons and the latent threat of escalation compel it to bring less power to bear (π <e π). More generally, a militarily weak but resolute state that already has nuclear weapons will be advantaged by a doctrine, posture, and force structure in which the potential risk rises rapidly as more power is brought to bear (a large η). We can see these incentives in the evolution of Pakistan’s nuclear doctrine. In order to deter a militarily stronger adversary from threatening its vital interests, Pakistan, like NATO before it, has eschewed a no-first use nuclear doctrine. After becoming an overt nuclear state in 1998, Pakistan moved toward a nuclear posture which envisioned the possibly rapid, “first use of nuclear weapons against conventional attacks.” This in turned required the operationalization of nuclear weapons as “usable warfighting instruments.”57 As former Pakistani General Feroz Khan puts it, “With relatively smaller conventional forces, and lacking adequate technical means, especially in early warning and surveillance, Pakistan relies on a more proactive nuclear defensive policy.”58 Pakistan’s Ambassador to the United States made the same point in the spring of 2001. Because of the growing conventional asymmetry with India, “Pakistan will be increasingly forced to rely on strategic capabilities... Risks of escalation through accident and miscalculation cannot be discounted.”59 In brief, Pakistan’s nuclear posture, which Narang describes as “asymmetric escalation,” entails a fundamental trade-off. When compared to a posture of “assured retaliation,” which emphasizes survivable second-strike forces targeted against an adversary’s key strategic centers, asymmetric escalation depends on being able to use or credibly threaten to use nuclear weapons against invading conventional forces. However, the forces needed to implement this “can generate severe command and control pressures that increase the risk of inadvertent use of nuclear weapons.”60 Pakistan’s acceptance of a riskier force posture is in keeping with the incentives highlighted in the model. The potential risk of nuclear escalation if India brings a given amount of power to bear is higher if Pakistan has an asymmetric-escalation doctrine. That is, η is higher as illustrated in the shift from η0 to η1 in Figure 6. As a result, India brings less power to bear (πe decreases) and Pakistan is better off (ΩΔ(πe) increases).

### A2 Deterrence – CMR

#### Deterrence assumes that the country is a unified actor – the military is more likely to launch a nuclear first strike due to a greater tendency to act aggressively and preempt potential threats – Cold War proves

#### The military is more likely to launch preventive wars – four reasons

Sagan 94 [Scott Sagan (Caroline S.G. Munro Professor of Political Science, the Mimi and Peter Haas University Fellow in Undergraduate Education, and Senior Fellow at the Center for International Security and Cooperation and the Freeman Spogli Institute at Stanford University), "The Perils of Proliferation," Stanford University, 1994] AZ

An organizational perspective, however, leads to a more pessimistic assessment of the likelihood of nuclear preventive wars, because it draws attention to military biases in favor of such attacks. This argument may appear counter-intuitive, since Richard Betts’ work has led to a widespread belief among political scientists that military leaders are not more likely than civilians to recommend the use of military force in general during crises.” Yet, there are four strong reasons to expect that military officers are predisposed to view preventive war in particular in a much more favorable light than are civilian authorities.“ First, military officers, because of self-selection into the profession and socialization afterwards, are more inclined than the rest of the population to see war as likely in the near term and inevitable in the long run.27 The professional focus of attention on warfare also makes military officers skeptical of non-military alternatives to war, while civilian leaders often place stronger hopes on diplomatic and economic methods of long-term conflict resolution.28 Such beliefs make military officers particularly susceptible to “better now than later” logic. Second, officers are trained to focus on pure military logic when analyzing security problems. Diplomatic, moral, or domestic political inhibitions against preventive war options are therefore less likely to be influential. Third, military officers display strong biases in favor of offensive doctrines and decisive operations.” Offensive doctrines enable military organizations to take the initiative, utilizing their standard plans under conditions they control while forcing adversaries to react to their favored strategies. Decisive operations utilize the principle of mass, may reduce casualties, and are more likely to lead to a military decision rather than a political stalemate. Preventive war would clearly have these desired characteristics. Finally, the military, like many organizations, tends to plan incrementally, leading it to focus on immediate plans for war and not the subsequent problems of managing the post-war world. Moreover, managing the post-war world is the diplomats’ job, not part of military officers’ operational responsibility. The professional military is likely therefore to be short-sighted, not examining the long-term political and diplomatic consequences of preventive war. In theory, these factors should make military officers stronger advocates of preventive war.

### Yes Miscalc [Sagan]

#### Risk of miscalc is inevitable – military hierarchies are slow to change and encourage cover-ups rather than reform

Sagan 94 [Scott Sagan (Caroline S.G. Munro Professor of Political Science, the Mimi and Peter Haas University Fellow in Undergraduate Education, and Senior Fellow at the Center for International Security and Cooperation and the Freeman Spogli Institute at Stanford University), "The Perils of Proliferation," Stanford University, 1994] AZ

Charles Perrow’s Normal Accidents argues there are inherent limits to the degree to which any large organization can understand the technical systems it creates to manage hazardous technologies, such as nuclear power plants, petrochemical industries, advanced biotechnology, and oil tankers."3 If organizations were omniscient, they could anticipate all potential failure modes in their systems and fix them ahead of time. Perrow argues, however, that boundedly rational organizations in the real world will inevitably have serious system accidents over time whenever they exhibit two structural characteristics: high interac- tive complexity (systems containing numerous interrelated, yet unplanned, interactions which are not readily comprehensible) and tight coupling (systems with highly time- dependent and invariant production sequences, with limited built-in slack). My own book, The Limits of Safety, adds a more political dimension to “normal accidents theory,” which combines with Perrow’s structural arguments to produce even greater pessimism about the likelihood of organizational accidents. Conflicting objectives inevitably exist inside any large organization that manages hazardous technology: top-level authorities may place a high priority on safety, but others may place a higher value on more parochial objectives, such as increasing production levels, enhancing the size of their subunit, or promoting their individual careers, all of which can lead to risky behaviors. Such a focus on the political manner in which conflicting goals are chosen and pursued is necessary to explain both why systems with such dangerous structural characteristics are constructed and why organizational learning about safety problems is often severely lim- ited.SM Normal accidents theory suggests that each of the three basic strategies used to improve organizational safety is highly problematic. From a structural perspective, adding redundant back-up systems can be counterproductive, since redundancy makes the system both more complex and more Opaque and therefore can create hidden common-mode errors. A political perspective notes, however, that organizations often continue to add layers of redundancy upon redundancy to complex systems, in large part because increased redun- dancy is in the narrow interests of subunits since it can enhance their size, resources, and autonomy. The politics of blame inside organizations also reduces trial-and-error learning from accidents because organizational leaders often find operators at lower levels in the hierarchy at fault, both because this absolves them from responsibility, and because it is usually cheaper to fire the operator than to change accident-prone procedures or structures. Knowing this, however, field-level operators have great incentives not to report safety incidents. Finally, from a normal accidents perspective, strong culture and socialization can have negative effects on organizational reliability since they encourage excessive concern about the organization’s reputation, disdain for outsiders’ and internal dissenters’ opinions, and even organizational cover-ups.

### A2 Extended Deterrence

#### Extended deterrence fails – US threats aren't credible

Thompson 14 [Loren Thompson (Chief Operating Officer of the non-profit Lexington Institute and Chief Executive Officer of Source Associates), "What If Deterrence Doesn't Work Anymore? Five Reasons To Worry," Forbes Magazine, 8/18/2014] AZ

5. Effective deterrence requires more resolve than Washington exhibits. Under a doctrine known as extended deterrence, the United States provides security guarantees to a wide array of foreign nations. The credibility of these guarantees depends not only on the military capabilities that Washington possesses, but on its perceived willingness to employ them. However, international media have been awash in recent months with stories of what the Economist calls the Obama Administration’s timidity. This reluctance to use military force extends beyond the White House to Capitol Hill and the broader political culture. The U.S. electorate does not want to get involved militarily in places like Syria or the Ukraine, and as David Sanger observed in the New York Times, “adversaries read polls.” Sustaining deterrence when the whole world suspects you aren’t willing to act sounds like Mission Impossible.

Current U.S. strategy relies too heavily on deterrence, at a time when its workability is increasingly doubtful in coping with emerging adversaries. It has become an excuse for inaction even in dealing with enemies who can be crushed using more traditional concepts of defense. Rather than waiting for the next time deterrence fails, as it inevitably will, Washington needs to think in more concrete ways about how to protect the nation against the military threats it faces. In some cases, that may mean abandoning commitments that are too dangerous or demanding. In other cases, it will mean replacing threats of retaliation with real defenses. But continuing to rely on a strategic concept that cannot be effectively implemented or verified in many cases is a prescription for disaster.

### A2 Second Strike Inev

#### Second-strike capability is slow to develop and undermined by lack of expertise in new states – China and Egypt prove

Sagan 94 [Scott Sagan (Caroline S.G. Munro Professor of Political Science, the Mimi and Peter Haas University Fellow in Undergraduate Education, and Senior Fellow at the Center for International Security and Cooperation and the Freeman Spogli Institute at Stanford University), "The Perils of Proliferation," Stanford University, 1994] AZ

This evidence demonstrates that there are strong organizational reasons to expect that professional militaries, if left on their own, will not necessarily construct an invulnerable nuclear arsenal. Although these organizational constraints may be overcome over time, since survivable forces are clearly in the interests of state leaders, organization theory would predict that the transition to a secure retaliatory force would be especially prolonged in time and imperfect in implementation in states in which civilian control over military organiza- tions is problematic. Although organizational impediments to survivability are likely to take somewhat different forms in different states, evidence does exist which suggests that paro- chial organizational interests and rigid routines have impeded the development of secure retaliatory forces in the developing world. The influence of organizational biases on strategic weapons deployments can perhaps best be seen the People’s Republic of China.77 China tested its first nuclear weapon in 1964, yet did not develop a confident and secure second-strike capability until the early 19803, when initial deployments of ICBMs (1981), SLBMs (1982-3), and mobile and concealed lRBMs (1980) were instituted." Why did China, which developed the atomic and hydrogen bombs very quickly, take so long to develop invulnerable missile-basing modes? The absence of perceived strategic threats is not a plausible answer, since the clashes along the Sino-Soviet border and the subsequent nuclear threats from Moscow occurred in 1969. Indeed, in 1970, US. intelligence agencies predicted that China would deploy ICBMs by 1975; and the failure to do so promptly has been described as “a major enigma in the PRC’s strategic weapons effort. ” While both technical problems and the political turmoil of the Cultural Revolution clearly played roles in the delayed development of Chinese strategic missiles, professional military biases also had an apparent impact in two specific areas. First, it is important to note that the military officers of Second Artillery Division, who controlled the operational missile forces in the 19703, consistently argued for larger arsenals, but did not independently pursue the survivability measures needed for the existing land-based missiles. Only in 1975, after Mao Zedong approved a weapons-institute report recommending that advanced deception measures be used to make China’s medium-range ballistic missiles less vulnerable to Soviet attacks, were successful camouflage and cave-basing deployment methods devel- oped.” As was the case in the U.S., high-level intervention by civilian authorities was necessary to encourage operational innovation. Second, the strong bureaucratic power of traditional People’s Liberation Army interests in the party and weapons institutes appears to have slowed the development of the Chinese navy’s SLBM force. The SLBM and ICBM programs were started at the same time, but land-based systems were consistently given higher priority: the reverse engineering of SLBM missiles supplied by the Soviets was abandoned in 1961, while similar land-based missile programs continued; and in the late 196os the DI" [lCBM] program was considered a “crash effort,” while “the JL-l [SLBM] designers did not feel an immediate or compelling urgency.”“ Thus, while China eventually developed a diverse set of survivable forces, it was a very vulnerable nuclear power for a longer period of time than can be explained by the rationalist assumptions of proliferation optimists. The influence of parochial organizational interests need not be entirely negative in this area, however, since in some circumstances interservice rivalry could lead to improvements in arsenal survivability. In Pakistan, for example, the army rather than the air force has operational control of missile development and deployments. The Pakistan Army therefore has strong institutional interests in deploying nuclear-capable missiles in order to offset the prestige and political power currently given to the Pakistan Air Force as the only service capable of delivering nuclear weapons against India.“2 If such missiles are eventually acquired and deployed in a survivable basing mode, they could reduce the vulnerability of a small Pakistani arsenal. This is not, however, a small if. For even if adequate forces are deployed, survivability is not ensured unless appropriate operational practices are developed. An illuminating ex- ample of how poorly designed organizational procedures and routines can produce “unnecessary” force vulnerabilities was seen in Egyptian Air Force operations in June 1967. Given the balance between the Egyptian and Israeli air forces at the time (Egypt had over a two-to- one advantage in bombers, fighter-bombers, and interceptors”), Egyptian authorities had strong reasons to believe that their ability to retaliate against any Israeli air attack was secure. Indeed, President Nassar publicly emphasized that the Israeli “fear of the Egyptian Air Force and bombers” was a deterrent to war when he ordered that the Gulf of Aqaba be closed.“ Two organizational routines of the Egyptian Air Force, however, created a severe vulnerability for what was “objectively” a sufficient retaliatory force. First, during the crisis, the air force lined up most of its aircraft wing-tip to wing-tip on the runways, making them easier to launch in a first strike, rather than dispersing them to reduce their vulnerability to an Israeli attack.” Second, the Egyptians always placed an interceptor force into defensive air patrol positions and held a “stand-to” alert at air bases at dawn, when they believed an Israeli strike was most likely. Both these operations routinely ended at 7:30 am, and, having observed these organizational practices, the Israelis attacked at 7:45 when the planes had landed and the pilots and crews were having breakfast. What had appeared to be an invulnerable force was thus virtually destroyed in the first hours of the war.

#### Second-strike is complex – new states lack expertise and protocols needed to create reliable deterrence – they're also incentivized to launch on-warning rather than develop 2nd strike

Sagan 94 [Scott Sagan (Caroline S.G. Munro Professor of Political Science, the Mimi and Peter Haas University Fellow in Undergraduate Education, and Senior Fellow at the Center for International Security and Cooperation and the Freeman Spogli Institute at Stanford University), "The Perils of Proliferation," Stanford University, 1994] AZ

Why would professional militaries not develop invulnerable nuclear forces if left to their own devices? Four reasons emerge from the logic of organizational theory. First, military bureaucracies, like other organizations, are interested in having more resources: they want more weapons, more men in uniform, more pieces of the budget pie. This could obviously lead to larger than necessary nuclear arsenals. Yet programs for making nuclear arsenals less vulnerable to attack (for example building shelters or missile-carrying trains) are expensive, and therefore decrease the resources available for the military hardware, the missiles or aircraft, that the organization values most highly. Second, militaries, like other organizations, have favored traditional ways of doing things and therefore maintain a strong sense of 13 what Morton Halperin calls organizational “essence.”‘5 Since efforts to decrease the vulnerability of nuclear forces often require new missions and weapon systems-and, indeed, often new organizational units-one would expect that the existing organizations would be resistant. Third, if organizational plans for war and conceptions of deterrence do not require invulnerable forces, they will not have incentives to pursue them. Thus, if military officers believe that they are likely to engage in preventive war, preemptive attacks, or even launch-on-warning options, then survivability measures may simply be perceived as unnecessary. Fourth, even if the technical requirements for survivability exist, organizational routines could impede invulnerability. Poorly designed standard operating procedures could completely undermine what might otherwise appear to be a survivable military force.

### A2 Prolif Checks War

#### Prolif increases the risk of conventional war – high costs encourage conflict

Kapur ‘7 (S. Paul, Associate Prof. Strategic Research Department – Naval War College, “Dangerous Deterrent: Nuclear Weapons Proliferation and Conflict in South Asia”, p. 171)

My study's findings have important implications for our theoretical understanding of nuclear proliferation's effects on international security. As noted, proliferation optimists argue that by threatening to raise the cost of war astronomically, nuclear weapons reduce the likelihood of conflict. My findings, however, indicate that this is not necessarily the case. Indeed, the study shows that the danger of nuclear weapons can in certain circumstances have the opposite effect. By potentially raising the costs of violence, nuclear weapons can make conflict more likely, encouraging a weak, revisionist state both to take territory while insulated from all-out conventional retaliation and to attempt to force third-party diplomatic intervention in ensuing crises. The high cost of nuclear war is precisely what promises to make such a strategy successful; nuclear danger deters adversaries and also attracts outside attention. If nuclear weapons were not so destructive, a weak, revisionist state would get neither of these benefits and would be less likely to engage in aggressive behavior. Thus, the high cost of nuclear war may not lead to lower level stability and can actually increase the likelihood of conflict.

### A2 Bioshift DA

#### Nuclear exchange outweighs bioweapons

Macfarlane 6--research Associate with the Security Studies Program at MIT and an expert on nuclear weapons proliferation and nuclear waste management and disposal. Previously, she has been Associate Professor of International Affairs and Earth Science at Georgia Tech.[Allison Macfarlane, “All Weapons of Mass Destruction Are Not Equal” MIT Security Studies Program Feb 8, 2006]RMT

The question remains, are these all weapons of mass destruction? If we accept that nuclear weapons truly cause mass destruction and death, and we calibrate mass destruction against the hundred-thousand-odd fatalities that nuclear weapons can cause, are chemical and biological weapons commensurate? Clearly, chemical weapons are not in the same categor y as nuclear weapons. At most, an attack carried out under ideal climatic conditions would result in a few thousands of deaths. 14 Some experts consider biological and nuclear weapons to be the “true” weapons of mass destruction. 15 The higher end of the lethality range of biological weapons is certainly in the realm of the threat posed by nuclear weapons, but the range itself is troubling. If a nuclear weapon goes off in a densely populated area, it will kill tens of thousands of people. It is not possible to make the same assertion for biological weapons. The extremely uncertain estimates of deaths from bioweapons rely on simulations that use limited datasets. For instance, one significant source of uncertainty is the lethality of the agent such as anthrax and modified (genetically or antibiotic-resistant) agents. These simulations describe worst-case scenarios and do not consider the ameliorating effects of defenses such as a good public health system. A bioweapon attack on the heart of a poor, overcrowded, third world city may indeed result in the high death rates suggested in some models. But is the United States as vulnerable? Hardly. It has an extensive public health system and has invested in biological weapons defenses. At this time, there is simply not enough data to suggest that biological weapons should occupy the same policy categor y as nuclear weapons. National Policy Implications What are the political and economic implications of equating biological and chemical weapons with nuclear ones? Americans are living in a state of fear of attack by WMD. The United States is now targeting non-nuclear weapons states with nuclear weapons and in the process is increasing the value of nuclear, chemical, and biological weapons. Moreover, the United States is spending far more money on biodefense measures than for nuclear defense.

#### Bioweapons won't be used offensively—only have defensive utility

**Cranmer, '4** - Skyler J, Assistant Professor of Political Science at the University of North Carolina (March 19. Paper presented at the International Studies Association. Pp 7. <http://www.allacademic.com//meta/p_mla_apa_research_citation/0/7/3/6/4/pages73644/p73644-1.php>)

Despite the offensive advantage of ambiguous accountability, biological weapons have serious offensive disadvantages. First, the onset of mass casualties takes weeks if not months; therefore if speed is of essence, biological weapons might not provide the advantage that a proliferating state would seek for offensive purposes. Second, the problems of undependability, unpredictability and uncontrollability discussed above deny biological weapons the precision needed for offensive action. Biological weapons possess significant defensive utility. Much like nuclear weapons, a biologically armed country, if it is being defeated and overrun, can launch a full biological counter attack against the population and military of the aggressing nation. This counterattack, though its effects would not be felt immediately (because of incubation periods and the gradual spread of the disease), could inflict mass casualties. However, the factors of undependability, unpredictability and uncontrollability would necessitate further preparations for effective defensive use. A biological power might, if war seemed likely, place “sleeper” agents in the target country who would deploy the agent if hostilities broke out. The immediate outbreak of disease following an attack on the defending country would disorient the aggressing country and cause it to divert considerable attention from the war to fighting disease at home; this would advantage the defender by relieving pressure on their front. Given these comparative utilities, it seems the utility of biological weapons lies in their ability to bolster the defensive power of a biological power. The fact that they advantage the defender creates a strong incentive for states which feel threatened by other states to develop biological weapons in order to better defend themselves.

#### No bio threat

Dove 12 [Alan Dove, PhD in Microbiology, science journalist and former Adjunct Professor at New York University, “Who’s Afraid of the Big, Bad Bioterrorist?” Jan 24 2012, http://alandove.com/content/2012/01/whos-afraid-of-the-big-bad-bioterrorist/]

The second problem is much more serious. Eliminating the toxins, we’re left with a list of infectious bacteria and viruses. With a single exception, these organisms are probably near-useless as weapons, and history proves it.¶ There have been at least three well-documented military-style deployments of infectious agents from the list, plus one deployment of an agent that’s not on the list. I’m focusing entirely on the modern era, by the way. There are historical reports of armies catapulting plague-ridden corpses over city walls and conquistadors trying to inoculate blankets with Variola (smallpox), but it’s not clear those “attacks” were effective. Those diseases tended to spread like, well, plagues, so there’s no telling whether the targets really caught the diseases from the bodies and blankets, or simply picked them up through casual contact with their enemies.¶ Of the four modern biowarfare incidents, two have been fatal. The first was the 1979 Sverdlovsk anthrax incident, which killed an estimated 100 people. In that case, a Soviet-built biological weapons lab accidentally released a large plume of weaponized Bacillus anthracis (anthrax) over a major city. Soviet authorities tried to blame the resulting fatalities on “bad meat,” but in the 1990s Western investigators were finally able to piece together the real story. The second fatal incident also involved anthrax from a government-run lab: the 2001 “Amerithrax” attacks. That time, a rogue employee (or perhaps employees) of the government’s main bioweapons lab sent weaponized, powdered anthrax through the US postal service. Five people died.¶ That gives us a grand total of around 105 deaths, entirely from agents that were grown and weaponized in officially-sanctioned and funded bioweapons research labs. Remember that.¶ Terrorist groups have also deployed biological weapons twice, and these cases are very instructive. The first was the 1984 Rajneeshee bioterror attack, in which members of a cult in Oregon inoculated restaurant salad bars with Salmonella bacteria (an agent that’s not on the “select” list). 751 people got sick, but nobody died. Public health authorities handled it as a conventional foodborne Salmonella outbreak, identified the sources and contained them. Nobody even would have known it was a deliberate attack if a member of the cult hadn’t come forward afterward with a confession. Lesson: our existing public health infrastructure was entirely adequate to respond to a major bioterrorist attack.¶ The second genuine bioterrorist attack took place in 1993. Members of the Aum Shinrikyo cult successfully isolated and grew a large stock of anthrax bacteria, then sprayed it as an aerosol from the roof of a building in downtown Tokyo. The cult was well-financed, and had many highly educated members, so this release over the world’s largest city really represented a worst-case scenario.¶ Nobody got sick or died. From the cult’s perspective, it was a complete and utter failure. Again, the only reason we even found out about it was a post-hoc confession. Aum members later demonstrated their lab skills by producing Sarin nerve gas, with far deadlier results. Lesson: one of the top “select agents” is extremely hard to grow and deploy even for relatively skilled non-state groups. It’s a really crappy bioterrorist weapon.¶ Taken together, these events point to an uncomfortable but inevitable conclusion: our biodefense industry is a far greater threat to us than any actual bioterrorists.

## Heg

### Heg Good – War

#### Hegemony key to solve extinction

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It is worth first examining the larger picture: We live in a time of arguably the greatest structural change in the global order yet endured, with this historical moment's most amazing feature being its relative and absolute lack of mass violence. That is something to consider when Americans contemplate military intervention in Libya, because if we do take the step to prevent larger-scale killing by engaging in some killing of our own, we will not be adding to some fantastically imagined global death count stemming from the ongoing "megalomania" and "evil" of American "empire." We'll be engaging in the same sort of system-administering activity that has marked our stunningly successful stewardship of global order since World War II. Let me be more blunt: As the guardian of globalization, the U.S. military has been the greatest force for peace the world has ever known. Had America been removed from the global dynamics that governed the 20th century, the mass murder never would have ended. Indeed, it's entirely conceivable there would now be no identifiable human civilization left, once nuclear weapons entered the killing equation. But the world did not keep sliding down that path of perpetual war. Instead, America stepped up and changed everything by ushering in our now-perpetual great-power peace. We introduced the international liberal trade order known as globalization and played loyal Leviathan over its spread. What resulted was the collapse of empires, an explosion of democracy, the persistent spread of human rights, the liberation of women, the doubling of life expectancy, a roughly 10-fold increase in adjusted global GDP and a profound and persistent reduction in battle deaths from state-based conflicts. That is what American "hubris" actually delivered. Please remember that the next time some TV pundit sells you the image of "unbridled" American military power as the cause of global disorder instead of its cure. With self-deprecation bordering on self-loathing, we now imagine a post-American world that is anything but. Just watch who scatters and who steps up as the Facebook revolutions erupt across the Arab world. While we might imagine ourselves the status quo power, we remain the world's most vigorously revisionist force. **¶** As for the sheer "evil" that is our military-industrial complex, again, let's examine what the world looked like before that establishment reared its ugly head.The last great period of global structural change was the first half of the 20th century, a period that saw a death toll of about 100 million across two world wars. That comes to an average of 2 million deaths a year in a world of approximately 2 billion souls. Today, with far more comprehensive worldwide reporting, researchers report an average of less than 100,000 battle deaths annually in a world fast approaching 7 billion people. Though admittedly crude, these calculations suggest a 90 percent absolute drop and a 99 percent relative drop in deaths due to war. We are clearly headed for a world order characterized by multipolarity, something the American-birthed system was designed to both encourage and accommodate. But given how things turned out the last time we collectively faced such a fluid structure, we would do well to keep U.S. power, in all of its forms, deeply embedded in the geometry to come.**¶** To continue the historical survey, after salvaging Western Europe from its half-century of civil war, the U.S. emerged as the progenitor of a new, far more just form of globalization -- one based on actual free trade rather than colonialism. America then successfully replicated globalization further in East Asia over the second half of the 20th century, setting the stage for the Pacific Century now unfolding.

#### Two-thousand years of history prove

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Despite increasingly compelling findings concerning the importance of status seeking in human behavior, research on its connection to war waned some three decades ago.38 Yet empirical studies of the relationship between both systemic and dyadic capabilities distributions and war have continued to cumulate. If the relationships implied by the status theory run afoul of well-established patterns or general historical findings, then there is little reason to continue investigating them. The clearest empirical implication of the theory is that status competition is unlikely to causegreat power military conflict in unipolarsystems. If status competition is an important contributory cause of great power war, then, ceteris paribus, unipolar systems should be markedly less war-prone than bipolar or multipolar systems. And this appears to be the case. As Daniel Geller notes in a review of the empirical literature: "The only polar structure that appears to influence conflict probability is unipolarity."39 In addition, a larger number of studies at the dyadic level support the related expectation that narrow capabilities gaps and ambiguous or unstable capabilities hierarchies increase the probability of war.40 These studies are based entirely on post-sixteenth-century European history, and most are limited to the post-1815 period covered by the standard data sets. Though the systems coded as unipolar, near-unipolar, and hegemonic are all marked by a high concentration of capabilities in a single state, these studies operationalize unipolarity in a variety of ways, often very differently from the definition adopted here. An ongoing collaborative project looking at ancient interstate systems over the course of two thousand years suggests that historical systems that come closest to the definition of unipolarity used here exhibit precisely the behavioral properties implied by the theory. 41 As David C. Kang's research shows, the East Asian system between 1300 and 1900 was an unusually stratified unipolar structure, with an economic and militarily dominant China interacting with a small number of geographically proximate, clearly weaker East Asian states.42 Status politics existed, but actors were channeled by elaborate cultural understandings and interstate practices into clearly recognized ranks. Warfare was exceedingly rare, and the major outbreaks occurred precisely when the theory would predict: when China's capabilities waned, reducing the clarity of the underlying material hierarchy and increasing status dissonance for lesser powers. Much more research is needed, but initial exploration of other arguably unipolar systems-for example, Rome, Assyria, the Amarna system-appears consistent with the hypothesis.43 Status Competition and Causal Mechanisms Both theory and evidence demonstrate convincingly that competition for status is a driver of human behavior, and social identity theory and related literatures suggest the conditions under which it might come to the fore in great power relations. Both the systemic and dyadic findings presented in large-N studies are broadly consistent with the theory, but they are also consistent with power transition and other rationalist theories of hegemonic war.

#### War is at its lowest level in history because of US primacy---best statistical studies prove

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Andrew Mack and his colleagues at the Human Security Report Project are to be congratulated. Not only do they present a study with a striking conclusion, driven by data, free of theoretical or ideological bias, but they also do something quite unfashionable: they bear good news. Social scientists really are not supposed to do that. Our job is, if not to be Malthusians, then at least to point out disturbing trends, looming catastrophes, and the imbecility and mendacity of policy makers. And then it is to say why, if people listen to us, things will get better. We do this as if our careers depended upon it, and perhaps they do; for if all is going to be well, what need then for us?¶ Our colleagues at Simon Fraser University are brave indeed. That may sound like a setup, but it is not. I shall challenge neither the data nor the general conclusion that violent conflict around the world has been decreasing in fits and starts since the Second World War. When it comes to violent conflict among and within countries, things have been getting better. (The trends have not been linear—Figure 1.1 actually shows that the frequency of interstate wars peaked in the 1980s—but the 65-year movement is clear.) Instead I shall accept that Mack et al. are correct on the macro-trends, and focus on their explanations they advance for these remarkable trends. With apologies to any readers of this forum who recoil from academic debates, this might get mildly theoretical and even more mildly methodological.¶ Concerning international wars, one version of the “nuclear-peace” theory is not in fact laid to rest by the data. It is certainly true that nuclear-armed states have been involved in many wars. They have even been attacked (think of Israel), which falsifies the simple claim of “assured destruction”—that any nuclear country A will deter any kind of attack by any country B because B fears a retaliatory nuclear strike from A.¶ But the most important “nuclear-peace” claim has been about mutually assured destruction, which obtains between two robustly nuclear-armed states. The claim is that (1) rational states having second-strike capabilities—enough deliverable nuclear weaponry to survive a nuclear first strike by an enemy—will have an overwhelming incentive not to attack one another; and (2) we can safely assume that nuclear-armed states are rational. It follows that states with a second-strike capability will not fight one another.¶ Their colossal atomic arsenals neither kept the United States at peace with North Vietnam during the Cold War nor the Soviet Union at peace with Afghanistan. But the argument remains strong that those arsenals did help keep the United States and Soviet Union at peace with each other. Why non-nuclear states are not deterred from fighting nuclear states is an important and open question. But in a time when calls to ban the Bomb are being heard from more and more quarters, we must be clear about precisely what the broad trends toward peace can and cannot tell us. They may tell us nothing about why we have had no World War III, and little about the wisdom of banning the Bomb now.¶ Regarding the downward trend in international war, Professor Mack is friendlier to more palatable theories such as the “democratic peace” (democracies do not fight one another, and the proportion of democracies has increased, hence less war); the interdependence or “commercial peace” (states with extensive economic ties find it irrational to fight one another, and interdependence has increased, hence less war); and the notion that people around the world are more anti-war than their forebears were. Concerning the downward trend in civil wars, he favors theories of economic growth (where commerce is enriching enough people, violence is less appealing—a logic similar to that of the “commercial peace” thesis that applies among nations) and the end of the Cold War (which end reduced superpower support for rival rebel factions in so many Third-World countries).¶ These are all plausible mechanisms for peace. What is more, none of them excludes any other; all could be working toward the same end. That would be somewhat puzzling, however. Is the world just lucky these days? How is it that an array of peace-inducing factors happens to be working coincidentally in our time, when such a magical array was absent in the past? The answer may be that one or more of these mechanisms reinforces some of the others, or perhaps some of them are mutually reinforcing. Some scholars, for example, have been focusing on whether economic growth might support democracy and vice versa, and whether both might support international cooperation, including to end civil wars.¶ We would still need to explain how this charmed circle of causes got started, however. And here let me raise another factor, perhaps even less appealing than the “nuclear peace” thesis, at least outside of the United States. That factor is what international relations scholars call hegemony—specifically American hegemony.¶ A theory that many regard as discredited, but that refuses to go away, is called hegemonic stability theory. The theory emerged in the 1970s in the realm of international political economy. It asserts that for the global economy to remain open—for countries to keep barriers to trade and investment low—one powerful country must take the lead. Depending on the theorist we consult, “taking the lead” entails paying for global public goods (keeping the sea lanes open, providing liquidity to the international economy), coercion (threatening to raise trade barriers or withdraw military protection from countries that cheat on the rules), or both. The theory is skeptical that international cooperation in economic matters can emerge or endure absent a hegemon. The distastefulness of such claims is self-evident: they imply that it is good for everyone the world over if one country has more wealth and power than others. More precisely, they imply that it has been good for the world that the United States has been so predominant.¶ There is no obvious reason why hegemonic stability theory could not apply to other areas of international cooperation, including in security affairs, human rights, international law, peacekeeping (UN or otherwise), and so on. What I want to suggest here—suggest, not test—is that American hegemony might just be a deep cause of the steady decline of political deaths in the world.¶ How could that be? After all, the report states that United States is the third most war-prone country since 1945. Many of the deaths depicted in Figure 10.4 were in wars that involved the United States (the Vietnam War being the leading one). Notwithstanding politicians’ claims to the contrary, a candid look at U.S. foreign policy reveals that the country is as ruthlessly self-interested as any other great power in history.¶ The answer is that U.S. hegemony might just be a deeper cause of the proximate causes outlined by Professor Mack. Consider economic growth and openness to foreign trade and investment, which (so say some theories) render violence irrational. American power and policies may be responsible for these in two related ways. First, at least since the 1940s Washington has prodded other countries to embrace the market capitalism that entails economic openness and produces sustainable economic growth. The United States promotes capitalism for selfish reasons, of course: its own domestic system depends upon growth, which in turn depends upon the efficiency gains from economic interaction with foreign countries, and the more the better. During the Cold War most of its allies accepted some degree of market-driven growth.¶ Second, the U.S.-led western victory in the Cold War damaged the credibility of alternative paths to development—communism and import-substituting industrialization being the two leading ones—and left market capitalism the best model. The end of the Cold War also involved an end to the billions of rubles in Soviet material support for regimes that tried to make these alternative models work. (It also, as Professor Mack notes, eliminated the superpowers’ incentives to feed civil violence in the Third World.) What we call globalization is caused in part by the emergence of the United States as the global hegemon.¶ The same case can be made, with somewhat more difficulty, concerning the spread of democracy. Washington has supported democracy only under certain conditions—the chief one being the absence of a popular anti-American movement in the target state—but those conditions have become much more widespread following the collapse of communism. Thus in the 1980s the Reagan administration—the most anti-communist government America ever had—began to dump America’s old dictator friends, starting in the Philippines. Today Islamists tend to be anti-American, and so the Obama administration is skittish about democracy in Egypt and other authoritarian Muslim countries. But general U.S. material and moral support for liberal democracy remains strong.

### Heg Good – Structural Violence

**Heg decreases structural violence---any alt dooms humanity to deprivation**

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First the absurdity: A few of the most over-the-top Bush-Cheney neocons did indeed promote a vision of U.S. primacy by which America shouldn't be afraid to wage war to keep other rising powers at bay. It was a nutty concept then, and it remains a nutty concept today. But since it feeds a lot of major military weapons system purchases, especially for the China-centric Air Force and Navy, don't expect it to disappear so long as the Pentagon's internal budget fights are growing in intensity. ¶ Meanwhile, the Chinese do their stupid best to fuel this outdated logic by building a force designed to keep America out of East Asia just as their nation's dependency on resources flowing from unstable developing regions skyrockets. With America's fiscal constraints now abundantly clear, the world's primary policing force is pulling back, while that force's implied successor is nowhere close to being able to field a similar power-projection capacity -- and never will be. So with NATO clearly stretched to its limits by the combination of Afghanistan and Libya, a lot of future fires in developing regions will likely be left to burn on their own. We'll just have to wait and see how much foreign commentators delight in that G-Zero dynamic in the years ahead. ¶ That gets us to the original "insult": the U.S. did not lord it over the world in the 1990s. Yes, it did argue for and promote the most rapid spread of globalization possible. But the "evil" of the Washington Consensus only yielded the most rapid growth of a truly global middle class that the world has ever seen. Yes, we can, in our current economic funk, somehow cast that development as the "loss of U.S. hegemony," in that the American consumer is no longer the demand-center of globalization's universe. But this is without a doubt the most amazing achievement of U.S. foreign policy, surpassing even our role in World War II. ¶ Numerous world powers served as global or regional hegemons before we came along, and their record on economic development was painfully transparent: Elites got richer, and the masses got poorer. Then America showed up after World War II and engineered an international liberal trade order, one that was at first admittedly limited to the West. But within four decades it went virally global, and now for the first time in history, more than half of our planet's population lives in conditions of modest-to-mounting abundance -- after millennia of mere sustenance. ¶ You may choose to interpret this as some sort of cosmic coincidence, but the historical sequence is undeniable: With its unrivaled power, America made the world a far better place. ¶ That spreading wave of global abundance has reformatted all sorts of traditional societies that lay in its path. Some, like the Chinese, have adapted to it magnificently in an economic and social sense, with the political adaptation sure to follow eventually. Others, being already democracies, have done far better across the board, like Turkey, Indonesia and India. But there are also numerous traditional societies where that reformatting impulse from below has been met by both harsh repression from above and violent attempts by religious extremists to effect a "counterreformation" that firewalls the "faithful" from an "evil" outside world.¶ Does this violent blowback constitute the great threat of our age? Not really. As I've long argued, this "friction" from globalization's tectonic advance is merely what's left over now that great-power war has gone dormant for 66 years and counting, with interstate wars now so infrequent and so less lethal as to be dwarfed by the civil strife that plagues those developing regions still suffering weak connectivity to the global economy. ¶ Let's remember what the U.S. actually did across the 1990s after the Soviet threat disappeared. It went out of its way to police the world's poorly governed spaces, battling rogue regimes and answering the 9-1-1 call repeatedly when disaster and/or civil strife struck vulnerable societies. Yes, playing globalization's bodyguard made America public enemy No. 1 in the eyes of its most violent rejectionist movements, including al-Qaida, but we made the effort because, in our heart of hearts, we knew that this is what blessed powers are supposed to do. ¶ Some, like the Bush-Cheney neocons, were driven by more than that sense of moral responsibility. They saw a chance to remake the world so as to assure U.S. primacy deep into the future. The timing of their dream was cruelly ironic, for it blossomed just as America's decades-in-the-making grand strategy reached its apogee in the peaceful rise of so many great powers at once. Had Sept. 11 not intervened, the neocons would likely have eventually targeted rising China for strategic demonization. Instead, they locked in on Osama bin Laden. The rest, as they say, is history. ¶ The follow-on irony of the War on Terror is that its operational requirements actually revolutionized a major portion of the U.S. military -- specifically the Army, Marines and Special Forces -- in such a way as to redirect their strategic ethos from big wars to small ones. It also forged a new operational bond between the military's irregular elements and that portion of the Central Intelligence Agency that pursues direct action against transnational bad actors. The up-front costs of this transformation were far too high, largely because the Bush White House stubbornly refused to embrace counterinsurgency tactics until after the popular repudiation signaled by the 2006 midterm election. But the end result is clear: We now have the force we actually need to manage this global era.¶ But, of course, that can all be tossed into the dumpster if we convince ourselves that our "loss" of hegemony was somehow the result of our own misdeed, instead of being our most profound gift to world history. Again, we grabbed the reins of global leadership and patiently engineered not only the greatest redistribution -- and expansion -- of global wealth ever seen, but also the greatest consolidation of global peace ever seen. ¶ Now, if we can sensibly realign our strategic relationship with the one rising great power, China, whose growing strength upsets us so much, then in combination with the rest of the world's rising great powers we can collectively wield enough global policing power to manage what's yet to come. ¶ As always, the choice is ours.

#### The world is getting better now because heg is peaceful

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Is Unipolarity Peaceful? As evidence, Monteiro provides metrics of the number of years during which great powers have been at war. For the unipolar era since the end of the Cold War, the United States has been at war 13 of those 22 years or 59% (see his Table 2 below). Now, I've been following some of the discussion by and about Steven Pinker and Joshua Goldstein's [work](http://www.nytimes.com/2011/12/18/opinion/sunday/war-really-is-going-out-of-style.html?pagewanted=all) that suggests the world is becoming more peaceful with interstate wars and intrastate wars becoming more rare. I was struck by the graphic that Pinker used in a Wall Street Journal [piece](http://online.wsj.com/article/SB10001424053111904106704576583203589408180.html) back in September that drew on the Uppsala Conflict Data, which shows a steep decline in the number of deaths per 100,000 people. How do we square this account by Monteiro of a unipolar world that is not peaceful (with the U.S. at war during this period in Iraq twice, Afghanistan, Kosovo) and Pinker's account which suggests declining violence in the contemporary period? Where Pinker is focused on systemic outcomes, Monteiro's measure merely reflect years during which the great powers are at war. Under unipolarity, there is only one great power so the measure is partial and not systemic. However, Monteiro's theory aims to be systemic rather than partial. In critiquing Wohlforth's early work on unipolarity stability, Monteiro notes: Wohlforth’s argument does not exclude all kinds of war. Although power preponderance allows the unipole to manage conflicts globally, this argument is not meant to apply to relations between major and minor powers, or among the latter (17). So presumably, a more adequate test of the peacefulness or not of unipolarity (at least for Monteiro) is not the number of years the great power has been at war but whether the system as a whole is becoming more peaceful under unipolarity **compared** to previous eras, including wars between major and minor powers or wars between minor powers and whether the wars that do happen are as violent as the ones that came before. Now, as Ross Douthat pointed [out](http://douthat.blogs.nytimes.com/2011/10/17/steven-pinkers-history-of-violence/), Pinker's argument isn't based on a logic of benign hegemony. It could be that even if the present era is more peaceful, unipolarity has nothing to do with it. Moreover, Pinker may be wrong. Maybe the world isn't all that peaceful. I keep thinking about the places I don't want to go to anymore because they are violent (Mexico, Honduras, El Salvador, Nigeria, Pakistan, etc.) As Tyler Cowen [noted](http://marginalrevolution.com/marginalrevolution/2011/10/steven-pinker-on-violence.html), the measure Pinker uses to suggest violence is a per capita one, which doesn't get at the absolute level of violence perpetrated in an era of a greater world population. But, if my read of other [reports](http://www.hsrgroup.org/human-security-reports/20092010/graphs-and-tables.aspx) based on Uppsala data is right**,** war is becoming more rare and less deadly (though later [data](http://www.pcr.uu.se/research/ucdp/charts_and_graphs/) suggests lower level armed conflict may be increasing again since the mid-2000s). The apparent violence of the contemporary era may be something of a presentist bias and reflect our own lived experience and the ubiquity of news media .Even if the U.S. has been at war for the better part of unipolarity, the deadliness is declining, even compared with Vietnam, let alone World War II. Does Unipolarity Drive Conflict? So, I kind of took issue with the Monteiro's premise that unipolarity is not peaceful. What about his argument that unipolarity drives conflict? Monteiro suggests that the unipole has three available strategies - defensive dominance, offensive dominance and disengagement - though is less likely to use the third. Like Rosato and Schuessler, Monteiro suggests because other states cannot trust the intentions of other states, namely the unipole, that minor states won't merely bandwagon with the unipole. Some "recalcitrant" minor powers will attempt to see what they can get away with and try to build up their capabilities. As an aside, in Rosato and Schuessler world, unless these are located in strategically important areas (i.e. places where there is oil), then the unipole (the United States) should disengage. In Monteiro's world, disengagement would inexorably lead to instability and draw in the U.S. again (though I'm not sure this necessarily follows), but neither defensive or offensive dominance offer much possibility for peace either since it is U.S. power in and of itself that makes other states insecure, even though they can't balance against it.

### Heg Inev

#### No risk of heg bad---US engagement and reintervention are inevitable---it’s only a question of making it effective

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In theory, the United States could refrain from intervening abroad. But, in practice, will it? Many assume today that the American public has had it with interventions, and Alice Rivlin certainly reflects a strong current of opinion when she says that “much of the public does not believe that we need to go in and take over other people’s countries.” That sentiment has often been heard after interventions, especially those with mixed or dubious results. It was heard after the four-year-long war in the Philippines, which cost 4,000 American lives and untold Filipino casualties. It was heard after Korea and after Vietnam. It was heard after Somalia. Yet the reality has been that after each intervention, the sentiment against foreign involvement has faded, and the United States has intervened again. ¶ Depending on how one chooses to count, the United States has undertaken roughly 25 overseas interventions since 1898: Cuba, 1898 The Philippines, 1898-1902 China, 1900 Cuba, 1906 Nicaragua, 1910 & 1912 Mexico, 1914 Haiti, 1915 Dominican Republic, 1916 Mexico, 1917 World War I, 1917-1918 Nicaragua, 1927 World War II, 1941-1945 Korea, 1950-1953 Lebanon, 1958 Vietnam, 1963-1973 Dominican Republic, 1965 Grenada, 1983 Panama, 1989 First Persian Gulf war, 1991 Somalia, 1992 Haiti, 1994 Bosnia, 1995 Kosovo, 1999 Afghanistan, 2001-present Iraq, 2003-present¶ That is one intervention every 4.5 years on average. Overall, the United States has intervened or been engaged in combat somewhere in 52 out of the last 112 years, or roughly 47 percent of the time. Since the end of the Cold War, it is true, the rate of U.S. interventions has increased, with an intervention roughly once every 2.5 years and American troops intervening or engaged in combat in 16 out of 22 years, or over 70 percent of the time, since the fall of the Berlin Wall. ¶ The argument for returning to “normal” begs the question: What is normal for the United States? The historical record of the last century suggests that it is not a policy of nonintervention. This record ought to raise doubts about the theory that American behavior these past two decades is the product of certain unique ideological or doctrinal movements, whether “liberal imperialism” or “neoconservatism.” Allegedly “realist” presidents in this era have been just as likely to order interventions as their more idealistic colleagues. George H.W. Bush was as profligate an intervener as Bill Clinton. He invaded Panama in 1989, intervened in Somalia in 1992—both on primarily idealistic and humanitarian grounds—which along with the first Persian Gulf war in 1991 made for three interventions in a single four-year term. Since 1898 the list of presidents who ordered armed interventions abroad has included William McKinley, Theodore Roose-velt, William Howard Taft, Woodrow Wilson, Franklin Roosevelt, Harry Truman, Dwight Eisenhower, John F. Kennedy, Ronald Reagan, George H.W. Bush, Bill Clinton, and George W. Bush. One would be hard-pressed to find a common ideological or doctrinal thread among them—unless it is the doctrine and ideology of a mainstream American foreign policy that leans more toward intervention than many imagine or would care to admit. ¶ Many don’t want to admit it, and the only thing as consistent as this pattern of American behavior has been the claim by contemporary critics that it is abnormal and a departure from American traditions. The anti-imperialists of the late 1890s, the isolationists of the 1920s and 1930s, the critics of Korea and Vietnam, and the critics of the first Persian Gulf war, the interventions in the Balkans, and the more recent wars of the Bush years have all insisted that the nation had in those instances behaved unusually or irrationally. And yet the behavior has continued.¶ To note this consistency is not the same as justifying it. The United States may have been wrong for much of the past 112 years. Some critics would endorse the sentiment expressed by the historian Howard K. Beale in the 1950s, that “the men of 1900” had steered the United States onto a disastrous course of world power which for the subsequent half-century had done the United States and the world no end of harm. But whether one lauds or condemns this past century of American foreign policy—and one can find reasons to do both—the fact of this consistency remains. It would require not just a modest reshaping of American foreign policy priorities but a sharp departure from this tradition to bring about the kinds of changes that would allow the United States to make do with a substantially smaller force structure. ¶ Is such a sharp departure in the offing? It is no doubt true that many Americans are unhappy with the on-going warfare in Afghanistan and to a lesser extent in Iraq, and that, if asked, a majority would say the United States should intervene less frequently in foreign nations, or perhaps not at all. It may also be true that the effect of long military involvements in Iraq and Afghanistan may cause Americans and their leaders to shun further interventions at least for a few years—as they did for nine years after World War I, five years after World War II, and a decade after Vietnam. This may be further reinforced by the difficult economic times in which Americans are currently suffering. The longest period of nonintervention in the past century was during the 1930s, when unhappy memories of World War I combined with the economic catastrophe of the Great Depression to constrain American interventionism to an unusual degree and produce the first and perhaps only genuinely isolationist period in American history. ¶ So are we back to the mentality of the 1930s? It wouldn’t appear so. There is no great wave of isolationism sweeping the country. There is not even the equivalent of a Patrick Buchanan, who received 3 million votes in the 1992 Republican primaries. Any isolationist tendencies that might exist are severely tempered by continuing fears of terrorist attacks that might be launched from overseas. Nor are the vast majority of Americans suffering from economic calamity to nearly the degree that they did in the Great Depression. ¶ Even if we were to repeat the policies of the 1930s, however, it is worth recalling that the unusual restraint of those years was not sufficient to keep the United States out of war. On the contrary, the United States took actions which ultimately led to the greatest and most costly foreign intervention in its history. Even the most determined and in those years powerful isolationists could not prevent it. ¶ Today there are a number of obvious possible contingencies that might lead the United States to substantial interventions overseas, notwithstanding the preference of the public and its political leaders to avoid them. Few Americans want a war with Iran, for instance. But it is not implausible that a president—indeed, this president—might find himself in a situation where military conflict at some level is hard to avoid. The continued success of the international sanctions regime that the Obama administration has so skillfully put into place, for instance, might eventually cause the Iranian government to lash out in some way—perhaps by attempting to close the Strait of Hormuz. Recall that Japan launched its attack on Pearl Harbor in no small part as a response to oil sanctions imposed by a Roosevelt administration that had not the slightest interest or intention of fighting a war against Japan but was merely expressing moral outrage at Japanese behavior on the Chinese mainland. Perhaps in an Iranian contingency, the military actions would stay limited. But perhaps, too, they would escalate. One could well imagine an American public, now so eager to avoid intervention, suddenly demanding that their president retaliate. Then there is the possibility that a military exchange between Israel and Iran, initiated by Israel, could drag the United States into conflict with Iran. Are such scenarios so farfetched that they can be ruled out by Pentagon planners? ¶ Other possible contingencies include a war on the Korean Peninsula, where the United States is bound by treaty to come to the aid of its South Korean ally; and possible interventions in Yemen or Somalia, should those states fail even more than they already have and become even more fertile ground for al Qaeda and other terrorist groups. And what about those “humanitarian” interventions that are first on everyone’s list to be avoided? Should another earthquake or some other natural or man-made catastrophe strike, say, Haiti and present the looming prospect of mass starvation and disease and political anarchy just a few hundred miles off U.S. shores, with the possibility of thousands if not hundreds of thousands of refugees, can anyone be confident that an American president will not feel compelled to send an intervention force to help?¶ Some may hope that a smaller U.S. military, compelled by the necessity of budget constraints, would prevent a president from intervening. More likely, however, it would simply prevent a president from intervening effectively. This, after all, was the experience of the Bush administration in Iraq and Afghanistan. Both because of constraints and as a conscious strategic choice, the Bush administration sent too few troops to both countries. The results were lengthy, unsuccessful conflicts, burgeoning counterinsurgencies, and loss of confidence in American will and capacity, as well as large annual expenditures. Would it not have been better, and also cheaper, to have sent larger numbers of forces initially to both places and brought about a more rapid conclusion to the fighting? The point is, it may prove cheaper in the long run to have larger forces that can fight wars quickly and conclusively, as Colin Powell long ago suggested, than to have smaller forces that can’t. Would a defense planner trying to anticipate future American actions be wise to base planned force structure on the assumption that the United States is out of the intervention business? Or would that be the kind of penny-wise, pound-foolish calculation that, in matters of national security, can prove so unfortunate?¶ The debates over whether and how the United States should respond to the world’s strategic challenges will and should continue. Armed interventions overseas should be weighed carefully, as always, with an eye to whether the risk of inaction is greater than the risks of action. And as always, these judgments will be merely that: judgments, made with inadequate information and intelligence and no certainty about the outcomes. No foreign policy doctrine can avoid errors of omission and commission. But history has provided some lessons, and for the United States the lesson has been fairly clear: The world is better off, and the United States is better off, in the kind of international system that American power has built and defended.

### A2 Transition Wars/Lashout

#### No transition wars---best empirics and theory

Paul K. MacDonald 11, Assistant Professor of Political Science at Williams College, and Joseph M. Parent, Assistant Professor of Political Science at the University of Miami, Spring 2011, “Graceful Decline?: The Surprising Success of Great Power Retrenchment,” International Security, Vol. 35, No. 4, p. 7-44

Our findings are directly relevant to what appears to be an impending great power transition between China and the United States. Estimates of economic performance vary, but most observers expect Chinese GDP to surpass U.S. GDP sometime in the next decade or two.91 This prospect has generated considerable concern. Many scholars foresee major conflict during a Sino-U.S. ordinal transition. Echoing Gilpin and Copeland, John Mearsheimer sees the crux of the issue as irreconcilable goals: China wants to be America's superior and the United States wants no peer competitors. In his words, "[N]o amount [End Page 40] of goodwill can ameliorate the intense security competition that sets in when an aspiring hegemon appears in Eurasia."92

Contrary to these predictions, our analysis suggests some grounds for optimism. Based on the historical track record of great powers facing acute relative decline, the United States should be able to retrench in the coming decades. In the next few years, the United States is ripe to overhaul its military, shift burdens to its allies, and work to decrease costly international commitments. It is likely to initiate and become embroiled in fewer militarized disputes than the average great power and to settle these disputes more amicably. Some might view this prospect with apprehension, fearing the steady erosion of U.S. credibility. Yet our analysis suggests that retrenchment need not signal weakness. Holding on to exposed and expensive commitments simply for the sake of one's reputation is a greater geopolitical gamble than withdrawing to cheaper, more defensible frontiers.

Some observers might dispute our conclusions, arguing that hegemonic transitions are more conflict prone than other moments of acute relative decline. We counter that there are deductive and empirical reasons to doubt this argument. Theoretically, hegemonic powers should actually find it easier to manage acute relative decline. Fallen hegemons still have formidable capability, which threatens grave harm to any state that tries to cross them. Further, they are no longer the top target for balancing coalitions, and recovering hegemons may be influential because they can play a pivotal role in alliance formation. In addition, hegemonic powers, almost by definition, possess more extensive overseas commitments; they should be able to more readily identify and eliminate extraneous burdens without exposing vulnerabilities or exciting domestic populations.

We believe the empirical record supports these conclusions.

In particular, periods of hegemonic transition do not appear more conflict prone than those of acute decline. The last reversal at the pinnacle of power was the Anglo-American transition, which took place around 1872 and was resolved without armed confrontation. The tenor of that transition may have been influenced by a number of factors: both states were democratic maritime empires, the United States was slowly emerging from the Civil War, and Great Britain could likely coast on a large lead in domestic capital stock. Although China and the United [End Page 41] States differ in regime type, similar factors may work to cushion the impending Sino-American transition. Both are large, relatively secure continental great powers, a fact that mitigates potential geopolitical competition.93 China faces a variety of domestic political challenges, including strains among rival regions, which may complicate its ability to sustain its economic performance or engage in foreign policy adventurism.94

Most important, the United States is not in free fall. Extrapolating the data into the future, we anticipate the United States will experience a "moderate" decline, losing from 2 to 4 percent of its share of great power GDP in the five years after being surpassed by China sometime in the next decade or two.95 Given the relatively gradual rate of U.S. decline relative to China, the incentives for either side to run risks by courting conflict are minimal. The United States would still possess upwards of a third of the share of great power GDP, and would have little to gain from provoking a crisis over a peripheral issue. Conversely, China has few incentives to exploit U.S. weakness.96 Given the importance of the U.S. market to the Chinese economy, in addition to the critical role played by the dollar as a global reserve currency, it is unclear how Beijing could hope to consolidate or expand its increasingly advantageous position through direct confrontation.

In short, the United States should be able to reduce its foreign policy commitments in East Asia in the coming decades without inviting Chinese expansionism. Indeed, there is evidence that a policy of retrenchment could reap potential benefits. The drawdown and repositioning of U.S. troops in South Korea, for example, rather than fostering instability, has resulted in an improvement in the occasionally strained relationship between Washington and Seoul. 97 U.S. moderation on Taiwan, rather than encouraging hard-liners in Beijing, resulted in an improvement in cross-strait relations and reassured U.S. allies that Washington would not inadvertently drag them into a Sino-U.S. conflict. 98 Moreover, Washington’s support for the development of multilateral security institutions, rather than harming bilateral alliances, could work to enhance U.S. prestige while embedding China within a more transparent regional order. 99 A policy of gradual retrenchment need not undermine the credibility of U.S. alliance commitments or unleash destabilizing regional security dilemmas. Indeed, even if Beijing harbored revisionist intent, it is unclear that China will have the force projection capabilities necessary to take and hold additional territory. 100 By incrementally shifting burdens to regional allies and multilateral institutions, the United States can strengthen the credibility of its core commitments while accommodating the interests of a rising China. Not least among the benefits of retrenchment is that it helps alleviate an unsustainable financial position. Immense forward deployments will only exacerbate U.S. grand strategic problems and risk unnecessary clashes. 101

#### No lashout---best studies

Paul K. MacDonald 11, Assistant Professor of Political Science at Williams College, and Joseph M. Parent, Assistant Professor of Political Science at the University of Miami, Spring 2011, “Graceful Decline?: The Surprising Success of Great Power Retrenchment,” International Security, Vol. 35, No. 4, p. 7-44

How do great powers respond to acute decline? The erosion of the relative power of the United States has scholars and policymakers reexamining this question. The central issue is whether prompt retrenchment is desirable or probable. Some pessimists counsel that retrenchment is a dangerous policy, because it shows weakness and invites attack. Robert Kagan, for example, warns, "A reduction in defense spending . . . would unnerve American allies and undercut efforts to gain greater cooperation. There is already a sense around the world, fed by irresponsible pundits here at home, that the United States is in terminal decline. Many fear that the economic crisis will cause the United States to pull back from overseas commitments. The announcement of a defense cutback would be taken by the world as evidence that the American retreat has begun."1 Robert Kaplan likewise argues, "Husbanding our power in an effort to slow America's decline in a post-Iraq and post-Afghanistan world would mean avoiding debilitating land entanglements and focusing instead on being more of an offshore balancer. . . . While this may be in America's interest, the very signaling of such an aloof intention may encourage regional bullies. . . . [L]essening our engagement with the world would have devastating consequences for humanity. The disruptions we witness today are but a taste of what is to come should our country flinch from its international responsibilities."2 The consequences of these views are clear: retrenchment should be avoided and forward defenses maintained into the indefinite future.3

Other observers advocate retrenchment policies, but they are pessimistic [End Page 7] about their prospects.4 Christopher Layne, for instance, predicts, "Even as the globe is being turned upside down by material factors, the foreign policies of individual states are shaped by the ideas leaders hold about their own nations' identity and place in world politics. More than most, America's foreign policy is the product of such ideas, and U.S. foreign-policy elites have constructed their own myths of empire to justify the United States' hegemonic role."5 Stephen Walt likewise advocates greater restraint in U.S. grand strategy, but cautions, "The United States . . . remains a remarkably immature great power, one whose rhetoric is frequently at odds with its conduct and one that tends to treat the management of foreign affairs largely as an adjunct to domestic politics. . . . [S]eemingly secure behind its nuclear deterrent and oceanic moats, and possessing unmatched economic and military power, the United States allowed its foreign policy to be distorted by partisan sniping, hijacked by foreign lobbyists and narrow domestic special interests, blinded by lofty but unrealistic rhetoric, and held hostage by irresponsible and xenophobic members of Congress."6 Although retrenchment is a preferable policy, these arguments suggest that great powers often cling to unprofitable foreign commitments for parochial reasons of national culture or domestic politics.7

These arguments have grim implications for contemporary international politics. With the rise of new powers, such as China, the international pecking order will be in increasing flux in the coming decades.8 Yet, if the pessimists are correct, politicians and interests groups in the United States will be unwilling or unable to realign resources with overseas commitments. Perceptions of weakness and declining U.S. credibility will encourage policymakers to hold on to burdensome overseas commitments, despite their high costs in blood and treasure.9 Policymakers in Washington will struggle to retire from profitless military engagements and restrain ballooning current accounts and budget deficits.10 For some observers, the wars in Iraq and Afghanistan represent the ill-advised last gasps of a declining hegemon seeking to bolster its plummeting position.11

In this article, we question the logic and evidence of the retrenchment pessimists. To date there has been neither a comprehensive study of great power retrenchment nor a study that lays out the case for retrenchment as a practical or probable policy. This article fills these gaps by systematically examining the relationship between acute relative decline and the responses of great powers. We examine eighteen cases of acute relative decline since 1870 and advance three main arguments.

First, we challenge the retrenchment pessimists' claim that domestic or international constraints inhibit the ability of declining great powers to retrench. In fact, when states fall in the hierarchy of great powers, peaceful retrenchment is the most common response, even over short time spans. Based on the empirical record, we find that great powers retrenched in no less than eleven and no more than fifteen of the eighteen cases, a range of 61-83 percent. When international conditions demand it, states renounce risky ties, increase reliance on allies or adversaries, draw down their military obligations, and impose adjustments on domestic populations.

Second, we find that the magnitude of relative decline helps explain the extent of great power retrenchment. Following the dictates of neorealist theory, great powers retrench for the same reason they expand: the rigors of great power politics compel them to do so.12 Retrenchment is by no means easy, but [End Page 9] necessity is the mother of invention, and declining great powers face powerful incentives to contract their interests in a prompt and proportionate manner. Knowing only a state's rate of relative economic decline explains its corresponding degree of retrenchment in as much as 61 percent of the cases we examined.

Third, we argue that the rate of decline helps explain what forms great power retrenchment will take. How fast great powers fall contributes to whether these retrenching states will internally reform, seek new allies or rely more heavily on old ones, and make diplomatic overtures to enemies. Further, our analysis suggests that great powers facing acute decline are less likely to initiate or escalate militarized interstate disputes. Faced with diminishing resources, great powers moderate their foreign policy ambitions and offer concessions in areas of lesser strategic value. Contrary to the pessimistic conclusions of critics, retrenchment neither requires aggression nor invites predation. Great powers are able to rebalance their commitments through compromise, rather than conflict. In these ways, states respond to penury the same way they do to plenty: they seek to adopt policies that maximize security given available means. Far from being a hazardous policy, retrenchment can be successful. States that retrench often regain their position in the hierarchy of great powers. Of the fifteen great powers that adopted retrenchment in response to acute relative decline, 40 percent managed to recover their ordinal rank. In contrast, none of the declining powers that failed to retrench recovered their relative position.

## Accidents

### Ev Weighing – Wheatley

#### best data – 75% larger sample size than any other study on the issue

With this definition, we compiled an original database of as many events as possible over the period 1950 to 2014. To be included in the database, an accident had to be verified by a published source, some of them reported in the peer-reviewed literature, but others coming from press releases, project documents, public utility commission filings, reports, and newspaper articles. Such an incremental approach to database building has been widely utilized in the peer-reviewed energy studies literature. Hirschberg et al. have constructed the ENergy-related Severe Accidents Database (ENSAD), the most comprehensive database worldwide covering accidents in the energy sector.[23] Flyvbjerg et al. built their own sample of 258 transportation infrastructure projects worth about 90 billion USD.[24, 25] Ansar et al. [26] built their own database of 45 large dams in 65 different countries to assess cost overruns. Also investigating cost overruns, Sovacool et al. [27, 28] compiled a database consisting of 401 electricity projects built between 1936 and 2014 in 57 countries, which constituted 325,515 megawatts (MW) of installed capacity and 8,495 kilometers of transmission lines.

### Ext – Wheatley

#### Risk is high – very large events happen every 62 years and median events happen every 10-20 years

We perform a statistical study of risk in nuclear energy systems. This study provides and analyzes a data set that is twice the size of the previous best data set on nuclear incidents and accidents, comparing three measures of severity: the industry standard International Nuclear Event Scale, the Nuclear Accident Magnitude Scale of radiation release, and cost in U.S. dollars. The rate of nuclear accidents with cost above 20 MM 2013 USD, per reactor per year, has decreased from the 1970s until the present time. Along the way, the rate dropped significantly after Chernobyl (April 1986) and is expected to be roughly stable around a level of 0.003, suggesting an average of just over one event per year across the current global fleet. The distribution of costs appears to have changed following the Three Mile Island major accident (March 1979). The median cost became approximately 3.5 times smaller, but an extremely heavy tail emerged, being well described by a Pareto distribution with parameter α = 0.5–0.6. For instance, the cost of the two largest events, Chernobyl and Fukushima (March 2011), is equal to nearly five times the sum of the 173 other events. We also document a significant runaway disaster regime in both radiation release and cost data, which we associate with the “dragon-king” phenomenon. Since the major accident at Fukushima (March 2011) occurred recently, we are unable to quantify an impact of the industry response to this disaster. Excluding such improvements, in terms of costs, our range of models suggests that there is presently a 50% chance that (i) a Fukushima event (or larger) occurs every 60–150 years, and (ii) that a Three Mile Island event (or larger) occurs every 10–20 years. Further—even assuming that it is no longer possible to suffer an event more costly than Chernobyl or Fukushima—the expected annual cost and its standard error bracket the cost of a new plant. This highlights the importance of improvements not only immediately following Fukushima, but also deeper improvements to effectively exclude the possibility of “dragon-king” disasters. Finally, we find that the International Nuclear Event Scale (INES) is inconsistent in terms of both cost and radiation released. To be consistent with cost data, the Chernobyl and Fukushima disasters would need to have between an INES level of 10 and 11, rather than the maximum of 7.

### Fear Reps Good

#### Scenario planning that considers improbable combinations of probable events is necessary for disaster preparedness that avoids disparate impacts on disadvantaged populations

Jackson 14 [(Moses Jackson, ) What Can the Environmental Community Learn From the Military? Interview With Chad Briggs on Scenario Planning, New Security Beat 9-8-2014] AT

Is it possible to prepare for the unexpected? Could anyone have foreseen, for instance, a nuclear meltdown triggered by an earthquake-induced tsunami? Or a brutal band of transnational militants quickly capturing Iraq’s largest dam while attempting to establish a new Islamic caliphate? Perhaps not exactly, but that shouldn’t stop us from anticipating unlikely events, says Chad Briggs, a risk assessment expert and strategy director of consulting firm GlobalInt. Scenario creation is one tool used by leaders to manage risks and improve decision-making processes. Long employed in military and intelligence contexts, scenario-building exercises may be equally valuable in the environmental domain, according to Briggs. Participants were encouraged to consider unlikely combinations of events that might bring out previously unrecognized vulnerabilities Earlier this year, GlobalInt conducted a foresight scenario symposium at the Wilson Center in collaboration with ECSP. The event brought together nearly 40 high-level participants from the military, development, conservation, humanitarian, and academic communities to raise awareness about the complexity of environmental security and related risks. The participants were split into groups and given sets of “driver cards,” each representing a potential trend or shock, like growing megacities, water scarcity, or transnational crime. Groups were then asked to pick a random selection of cards from the set and begin building scenarios that might emerge from those combined drivers. Participants were encouraged to consider unlikely combinations of events that might bring out previously unrecognized vulnerabilities. The results were diverse, compelling, and sometimes terrifying. One scenario highlighted the various ways a global pandemic could wreak havoc across a range of sectors; another showed how a cyber-attack on oil infrastructure could affect foreign energy investment and security in Nigeria. While seemingly implausible, many were no less so than recent headlines, and the creation process helped participants understand how a failure of imagination can have devastating consequences. We emailed Briggs a number of questions about scenario planning and why he thinks it’s important for environmental security. What is your background? How did you come to be interested in environmental security risk assessment and scenario planning? I’ve always had a split background in international relations and environmental sciences. In graduate school I began working on environmental security as a way of connecting my interests in water and conflict, particularly as I felt that political science was too blinkered in its views and use of new tools and concepts. My first published article argued that new concepts of complexity and different disciplines had to be brought together. I spent much of my Ph.D. studies learning about environmental assessments and risk, where different methods of scenario planning were common. Once I finished my Ph.D., I began to specialize more in risk assessments where few data were available and/or where non-linear (abrupt) relationships existed. How does the scenario-creation methodology help participants prepare for the unknown? If participants are involved in the creation, how do you surprise them? Normally in our jobs we deal with issues that are already well known to our organization or research discipline – essentially what the military worries about in “preparing for the last war.” Bureaucracies tend to avoid ideas or concepts that are uncomfortable, and in environmental risks that means focusing on risks that are historically more “probable.” But as we’ve seen with drought in California or the 2011 tsunami that struck Japan, history is not always the best guide for preparing for the future. What we’ve found in our past scenario planning work with the U.S. Air Force Minerva project and the U.S. Department of Energy is that most of these disasters are not single events, but rather improbable combinations of probable factors. Addressing any one of these factors individually leads us to think that we are well prepared for future risks, but when we combine seemingly unrelated factors we begin to understand how the entire system behaves. One of the benefits of the scenario-creation workshops is that they encourage participants to address these uncomfortable and complex combinations of risks. Rather than ignoring risks because we interpret too much uncertainty as “highly improbable,” the workshops examine the consequences of shocks in terms of systemic resilience. You distinguish between “forecasts” and “foresight.” Can you describe this distinction? Forecasts attempt to predict what will happen in the future, and normally attach a probability function to individual variables such as daytime high temperature, river flood levels, or energy prices. Forecasts take existing data and extrapolate into the future, requiring reliable information and generally linear relationships. Foresight is a broader concept, which admits that present knowledge is imperfect and that both our current understanding and future actions can affect how the future is shaped. In other words, foresight admits gross uncertainty and attempts to understand how to adjust to complex, potential futures. Some observers have challenged the notion that the environment can or should be “securitized.” What do you say to those who question the compatibility of military/intelligence techniques, like scenario building, and environmental perspectives? I am quick to admit that there are risks in securitizing environmental issues and these must always be kept in mind. Daniel Deudney wrote an important article warning of securitizing environmental issues in 1991, and his warnings are still pertinent today. The military and intelligence communities are accustomed to secrecy, which can be an enormous barrier First, if people link the environment and security merely for the purpose of bolstering their own position, either politics or research can be warped in misleading ways. For example, when the U.S. military provided disaster relief in Pakistan following the 2010 floods, there was a risk of the Pakistani military gaining greater power vis-à-vis the civilian government. Likewise, academics who shift their environmental research and link it to security to gain more notice risk emphasizing state stability over ecological or human security concerns. The focus of many environmental security discussions on violent conflict is especially problematic. Second, securitizing natural events or resources can be misleading when insecurity is presented as “naturalized,” or when analyses suggest that resources are themselves sources of insecurity rather than the way they are managed or traded. It’s far more common for the environment to be used as a weapon in war than to be the actual cause of war. Third, the military and intelligence communities are accustomed to secrecy, which can be an enormous barrier when open exchange of information is so important for effective foresight. To their credit, the Minerva project allowed us to keep almost all of our work unclassified and its interests in energy and environmental factors were far more pragmatic than I’ve seen in many university departments. How do you see climate change fitting into broader security discussions and efforts to plan for future risks? While the security community has discussed climate change impacts as security risks since the early 2000s, the narratives we see in popular media and political dialogues today often differ significantly from what occurs in operational and strategic planning. The military’s most pressing concerns tends to focus on infrastructure (e.g., rising sea levels flooding naval bases), new operational concerns (especially the Arctic Sea), and disaster response. The link between environmental change and violent conflict has always been tenuous, and too much focus on conflict as an end-point ignores broader human security concerns and can even be something of a self-fulfilling prophecy. Even if the military is interested in risks like climate change, military responses are often inappropriate. Chad Briggs talks about dealing with risk and uncertainty in 2010 The trick, then, is to use military and intelligence tools in assessment and early warning, but recognize that they are limited in how they can respond by themselves. Processes like workshops are therefore important in first identifying risks and vulnerabilities, but then asking who would respond (and how) given cascading impacts. It’s much easier to discuss that in advance than after a disaster strikes, and environmental risks are good points for potential cooperation. Your workshops highlight the need to identify vulnerabilities across different time horizons. In your experience, how do slower trends, like population dynamics, play into environmental security scenarios? The slower processes, like water supplies or population changes (growth, urbanization) are crucial for background information. Scenarios typically have long-term trends overlaid by short-term changes or shocks, so even a scenario set five years in the future has to incorporate 40-year trends. Likewise, a scenario that focuses on Uganda has to include global trends such as increasing food and energy demand from China. Population in and of itself isn’t a risk, just like a hurricane isn’t considered a disaster until it makes landfall somewhere – the important thing is to understand how factors like population dynamics interact with other factors over time. Disaster response policies can easily ignore vulnerable populations in favor of those who are easiest to help Urbanization is one example. Massive numbers of people are moving to coastal cities and increasing the vulnerability of those places through a combination of increased hazard exposure (especially flooding), greater reliance on urban infrastructure, and loss of community networks and resilience. As coastal cities grow, the challenges for disaster mitigation and response increase substantially. Another factor with population and demographics is to remember that disasters often disproportionately affect women, children, and the elderly, and that resilience and disaster response policies can easily ignore vulnerable populations in favor of those who are easiest to help. Providing certain services to vulnerable populations can provide enormous dividends in systemic resilience, reducing the need for disaster response missions and long-term aid. Researchers and policymakers have to be careful not to ignore certain groups just because few data exist on them, and this is one reason I’ve long argued that tools from field epidemiology have a place in international security planning. We need ground-up assessments that try to look at the dark places in our scenarios, and address uncertainty head-on rather than avoid it. Tackling uncertainty is one area where intelligence and security planning differs sharply from the research and policy communities, and where some important lessons can be learned.

### A2 New Tech

#### New tech can't solve

Wheatley et al 15 [Spencer Wheatley (ETH Zurich, Department of Management, Technology and Economics, Switzerland), Benjamin Sovacool, Didier Sornette, "Predicting Future Fukushimas: A Response to Dr. Walden’s Criticism," 2015] AZ

Fifth, much of Dr. Walden’s criticism rests on the fact that we (admittedly) refrain from making projections about the future of nuclear power and thus possible future nuclear technology that could have improved safety features. This was intentional—the future of the industry is highly uncertain, and due to improvements in capacity factors and current plans for multiple license extensions, coupled with the difficulty of siting new reactors in places like the United States, the existing fleet will continue to operate for some time. Unless new reactors substitute and phase out old ones—not necessarily the case —new technology won’t reduce the risks of the old. Put another way, the bulk of our analysis is historical – though it does draw from this history to suggest a possible future, we by no means treat the future as predetermined. We would also argue, as Supreme Court Justice Oliver Wendell Holmes once stated, that a page of history is worth a volume of logic.

## DA

### 1AR – Poverty DA

#### Energy poverty decreasing now – shared energy grid and hydro solves

Swan Ye Htut 16 [(Swan Ye Htut, ) ASEAN energy officials set sights on regional power grid, No Publication 8-18-2016] AT

Energy officials will seek to better connect ASEAN members’ electricity grids into a regional energy network over the next five years to better utilise the countries’ respective strengths and weaknesses in power generation, it was announced at a meeting of the bloc in Myanmar’s capital Nay Pyi Taw. “We will sell extra electricity by linking the neighbouring countries. We will buy [electricity] if we need it,” U Htein Lwin, permanent secretary for the Ministry of Electricity and Energy, told The Myanmar Times following the 34th ASEAN Energy Senior Officials Meeting last week. “Therefore, we are now drawing up plans for [transnational] electricity lines. We also plan to buy from China and are also discussing buying from Laos. We are also conducting physical studies. If it is convenient, we’ll arrange for interconnection,” he added. The aim is to promote energy efficiency and redistribution of electricity from countries in the region that generate a surplus to those – like Myanmar – that have unmet energy needs, U Htein Lwin said. “The main point of this project is to see energy used sufficiently in all ASEAN countries; energy means oil and gas, and electricity,” he said. The first step in ASEAN energy cooperation will see Laos sell electricity to Malaysia, via its southern neighbour Thailand. Officials have set a 2016-20 window for the first phase, with a second stage to follow, bringing Singapore into the multilateral transmission grid. The goal is to build on already existing bilateral electricity-sharing arrangements within the regional bloc, according to Datuk Loo Took Gee, the Malaysian Ministry of Energy, Green Technology and Water’s secretary general. “For example, Thailand has energy needs. They buy electricity by linking up with Laos. Malaysia also sells its extra energy from Sarawak to Kalimantan in Indonesia ... There are many energy-trading cases by connecting islands like Sumatra to peninsular Malaysia,” he told The Myanmar Times at a press conference, through an interpreter. According to Myanmar’s 2014 census, electrification in the country remains low, with less than 33 percent of households using electricity as their primary source of lighting. A slew of proposed hydropower dams would significantly expand Myanmar’s power generation capacity, but activists in recent years have complained that in several cases the power generated is slated for export, namely to Thailand and China.

#### Nuclear doesn’t solve – not enough supply to run reactors constantly, too slow to build, too costly, and crushes government budgets

Symon 08 [“Nuclear Power in Southeast Asia: Implications for Australia and Non-Proliferation” Lowy Institute for International Policy April 2008] AT

Asia. In addition, they argue that advanced nuclear technology is safe. 11 Issues, concerns and fears Economics The economics of nuclear power are not as simple as they may seem. While the fuel operating costs of a nuclear power plant are very low, compared with a gas or coal-fired plant, the capital costs are high compared with coal and especially gas-fuelled plants. A 1,000 MW plant would cost something of the order of $US2.5 billion, and take much longer to build, especially compared to the construction period for a gas-fuelled plant. Nuclear power generation is a high capital and low fuel cost option. The fuel cost as a proportion of total output costs, that is, including non-fuel operations and maintenance costs and amortised constructions costs, is about 10-12 percent of total output costs. In comparison, the fuel component in coal combustion plants is about 25-30 percent and in gas combined cycle plants 60-65 percent. But this does not tell the whole story. The processes involved in preparing the final nuclear fuel rods from the initially-mined uranium oxide are also technologically challenging and expensive. Nuclear fuel is almost entirely enriched uranium, although it is possible to draw on plutonium, which is a by-product of nuclear power generation, and views vary on the possible eventual use of naturally occurring thorium. Uranium is an abundant element found mineralised in many parts of the world and often in high ore quantities. Australia, Canada and Kazakhstan have the greatest resources and are the largest producers, followed by Niger, Namibia and South Africa. [Table 4] The absence of known commercial reserves of uranium in Southeast Asia may reflect a lack of exploration. There are, from an international perspective, plentiful reserves of uranium ore that can be drawn on to meet any realistic regional demand projections. But there may be short-term shortages of supply because of delay in bringing new mines into production. Concentrated uranium ore, uranium oxide or ‘yellowcake’ is sold under long-term contracts and on spot markets. Recent price increases have been influenced by the entrance of hedge funds into the market. There is also what is known as secondary supply, that is, recycled uranium and plutonium from spent fuel and re-enriched tails from processing residues, stockpiles, and ex- military weapons grade uranium and plutonium. Secondary supply is currently very important with primary production from world uranium mines supplying only about 60 percent of the power utility demand. Ex-military material as a result of a US-Russian arms reduction agreement is especially significant. Over the coming decades, though, the role of secondary supply is expected by the industry to diminish markedly. While the costs of mining uranium ore to produce uranium oxide concentrates are not high, plans for a nuclear generation industry must factor in the mid and final fuel preparation stages. Presently, the geographical disposition and industrial structure of preparatory fuel stages are concentrated in Europe (including Russia) and North America, with some capability also in Japan and China. Once the uranium oxide (U308) has been mined and concentrated, it must be converted to uranium hexafluoride (UF6) for later enrichment. The international conversion industry is highly concentrated with four companies in Russia (Tenex), France (Areva), Canada (Cameco) and the US (Conerdyn) supplying more than 80 percent of the world’s uranium conversion services. The uranium hexafluoride is then enriched, most commonly by use of gaseous centrifuges, to increase the proportion of the U-235 isotope in uranium from its naturally occurring 0.7 percent to between three and five percent. The same technology that is used for civilian purposes can be used for military ones, though weapons-grade enriched uranium needs to be at 90 percent or more U-235. But a much smaller tonnage of concentrate is needed to make a nuclear weapon compared with supporting a power plant. The minimum quantity of uranium ore concentrate as U308 required for production of a nuclear weapon is around seven tonnes. By contrast, 200 tonnes of concentrate are required to operate a 1,000 MW nuclear power plant for one year. As with conversion, the enrichment market is also very concentrated, structured around a small number of suppliers in the US, Europe and Russia with Japan and China also having capabilities. Finally, the enriched uranium is then fabricated and assembled into reactor fuel. UF6 is transformed first to another oxide of uranium, UO 2 . This powder is compressed into small pellets which are sintered and then ground into a precise shape and loaded into thin zirconium alloy or steel tubes to create fuel rods. The rods are bundled into fuel assemblies for insertion into the reactor. The fuel fabrication market is characterised by customisation, with the specification dependent upon reactor design and the fuel management strategy of each power utility, though there is a trend worldwide towards standardising around a small number of designs. Currently three main suppliers provide approximately 80 percent of global fuel demand – France’s Areva, BNFL Westinghouse (owned by Toshiba of Japan), and Global Nuclear Fuels (GE of the US, and Toshiba and Hitachi of Japan). Forecasts suggest that capacity significantly exceeds demand. Fuel fabricators are typically associated with reactor vendors who supply the initial core and in many cases refuel the reactor. 12 How economical nuclear power is as an option for Southeast Asian countries will continue to be debated even as the first plants move ahead. Certainly, it would not make economic sense to engage in fuel preparation. There will be financing challenges. It would seem very unlikely that the World Bank and Asian Development Bank, major sources of infrastructure finance, would provide all the funds for nuclear power ahead of support for non-nuclear energy and other infrastructure. Meanwhile, governments and utilities themselves would still be hard-pressed to find funding on the scale needed for nuclear generation from other budgetary and revenue sources.

#### That turns energy poverty – high costs are pushed onto consumers which means they either can’t access energy or they are pushed deeper into poverty by purchasing it. Energy savings boosts GDP and increases incomes.

IEA Energy Business Council 16 [(IEA Energy Business Council is an executive-level group, with members from a wide variety of companies involved in energy exploration, production and consumption, ranging from commodities companies to automobile manufacturers to wind and solar producers and industry associations) Energy and Air Pollution 2016 - World Energy Outlook Special Report: SOUTHEAST ASIA ENERGY OUTLOOK July 27 2016] AT

Improving energy efficiency would deliver major energy security, economic and environmental benefits. In the Efficient ASEAN Scenario, net oil imports are cut by around 700 kb/d in 2035, comparable with Malaysia’s current production, slashing oil-import bills by $30 billion. By the end of the period, net exports of natural gas are three-times higher (at 42 bcm) and of coal 50% higher (at 320 Mtce). An additional $330 billion in investment to improve end-use efficiency is required to realise these gains. In turn, this amount is more than offset by the resulting fuel cost savings, which total nearly $500 billion. Regional GDP is boosted by about 2% in 2035, as reduced spending on energy increases disposable income and stimulates activity elsewhere in the economy.

#### Case turns the DA – proliferation saps resources from poverty alleviation

ICAN 11 [International Campaign to Abolish Nuclear Weapons “Nuclear weapons spending: a theft of public resources” 2011] AT

Nuclear weapons pose a grave threat to the future of humanity, and their development, manufacture, maintenance and modernization divert vast public resources from health care, education, climate action, disaster relief and other essential services. It is estimated that in 2011 the nine nuclear-armed nations will spend a total of US$104.9 billion on their nuclear arsenals,1 despite the International Court of Justice having declared in 1996 that it is illegal to use nuclear weapons2 and all parties to the nuclear Non-Proliferation Treaty having acknowledged in 2010 the catastrophic humanitarian consequences of any such use.3 The World Bank estimated in 2002 that an annual investment of just US$40 to $60 billion – roughly half the amount currently spent on nuclear weapons – would be enough to meet the internationally agreed Millennium Development Goals on poverty alleviation by the target date of 2015.4 The goals are to: n Eradicate extreme poverty and hunger n Achieve universal primary education n Promote gender equality/empowerment n Reduce child mortality n Improve maternal health n Combat HIV/AIDS and other diseases n Ensure environmental sustainability n Develop partnerships for development. Other organizations have come up with higher cost estimates.5 This paper compares nuclear weapons spending with development and disarmament spending, and offers practical suggestions for citizen action aimed at redirecting public money away from nuclear weapons and towards meeting human needs. These weapons do nothing to address any of today’s real security problems. With opinion polls in nuclear-armed nations showing strong public support for the abolition of nuclear weapons – and most political leaders also championing the cause – investments in nuclear arms must cease.

# Ishan 1ACs

## 1AC – Util Generic

#### The standard is maximizing expected well-being.

#### Personal Identity is irrelevant, we can separate our brains and become separate streams of thought.

DerekParfit

Derek Parfit, Reasons and Persons (Oxford: Clarendon, 1984).

Some recent medical cases provide striking evidence in favour of the Reductionist View. Human beings have a lower brain and two upper hemispheres, which are connected by a bundle of fibres. In treating a few people with severe epilepsy, surgeons have cut these fibres. The aim was to reduce the severity of epileptic fits, by confining their causes to a single hemisphere. This aim was achieved. But the operations had another unintended consequence. The effect, in the words of one surgeon, was the creation of ‘two separate spheres of consciousness.’ This effect was revealed by various psychological tests. These made use of two facts. We control our right arms with our left hemispheres, and vice versa. And what is in the right halves of our visual fields we see with our left hemispheres, and vice versa. When someone’s hemispheres have been disconnected, psychologists can thus present to this person two different written questions in the two halves of his visual field, and can receive two different answers written by this person’s two hands

#### Given the absence of identity only utilitarianism makes sense

Shoemaker 99

Shoemaker, David (Dept of Philosophy, U Memphis). “Utilitarianism and Personal Identity.” *The Journal of Value Inquiry* 33: 183–199, 1999. <http://www.csun.edu/~ds56723/jvipaper.pdf>

Extreme reductionism might lend support to utilitarianism in the following way. Many people claim that we are justified in maximizing the good in our own lives, but not justified in maximizing the good across sets of lives, simply because each of us is a single, deeply unified person, unified by the further fact of identity, whereas there is no such corresponding unity across sets of lives. But if the only justification for the different treatment of individual lives and sets of lives is the further fact, and this fact is undermined by the truth of reductionism, then nothing justifies this different treatment. There are no deeply unified subjects of experience. What remains are merely the experiences themselves, and so any ethical theory distinguishing between individual lives and sets of lives is mistaken. If the deep, further fact is missing, then there are no unities. The morally significant units should then be the states people are in at particular times, and an ethical theory that focused on them and attempted to improve their quality, whatever their location, would be the most plausible. Utilitarianism is just such a theory

#### Only utilitarianism can serve as the basis to legitimately justify policy to the public. Government actions will inevitably lead to trade-offs between citizens. The only justifiable way to resolve these conflicts is utilitarianism.

Gary Woller [BYU Prof., “An Overview by Gary Woller”, A Forum on the Role of Environmental Ethics, June 1997, pg. 10]

Moreover, virtually all public policies entail some redistribution of economic or political resources, such that one group's gains must come at another group's ex- pense. Consequently, public policies in a democracy must be justified to the public, and especially to those who pay the costs of those policies. Such justification cannot simply be assumed a priori by invoking some higher-order moral principle. Appeals to a priori moral principles, such as environmental preservation, also often fail to acknowledge that public policies inevitably entail trade-offs among competing values. Thus since policymakers cannot justify inherent value conflicts to the public in any philosophical sense, and since public policies inherently imply winners and losers, the policymakers' duty to the public interest requires them to demonstrate that the redistributive effects and value trade-offs implied by their polices are somehow to the overall advantage of society. At the same time, deontologically based ethical systems have severe practical limitations as a basis for public policy. At best, [Also,] apriorimoral principles provide only general guidance to ethical dilemmas in public affairs and do not themselves suggest appropriate public policies, and at worst, they create a regimen of regulatory unreasonableness while failing to adequately address the problem or actually making it worse.For example, a moral obligation to preserve the environment by no means implies the best way, or any way for that matter, to do so, just as there is no a priori reason to believe that any policy that claims to preserve the environment will actually do so. Any number of policies might work, and others, although seemingly consistent with the moral principle, will fail utterly. That deontological principles are an inadequate basis for environmental policy is evident in the rather significant irony that most forms of deontologically based environmental laws and regulations tend to be implemented in a very utilitarian manner by street-level enforcement officials. Moreover, ignoring the relevant costs and benefits of environmental policy and their attendant incentive structures can, as alluded to above, actually work at cross purposes to environmental preservation. (There exists an extensive literature on this aspect of regulatory enforcement and the often perverse outcomes of regulatory policy. See, for example, Ackerman, 1981; Bartrip and Fenn, 1983; Hawkins, 1983, 1984; Hawkins and Thomas, 1984.) Even the most die-hard preservationist/deontologist would, I believe, be troubled by this outcome. The above points are perhaps best expressed by Richard Flathman, The number of values typically involved in public policy decisions, the broad categories which must be employed and above all, the scope and complexity of the consequences to be anticipated militate against reasoning so conclusively that they generate an imperative to institute a specific policy. It is seldom the case that only one policy will meet the criteria of the public interest (1958, p. 12). It therefore follows that in a democracy, policymakers have an ethical duty to establish a plausible link between policy alternatives and the problems they address, and the public must be reasonably assured that a policy will actually do something about an existing problem; this requires the means-end language and methodology of utilitarian ethics. Good intentions, lofty rhetoric, and moral piety are an insufficient though perhaps at times a necessary, basis for public policy in a democracy.

#### If there’s even a risk of ethical uncertainty, we should always prioritize the survival of the human race to ensure future value.

Bostrom [Nick Bostrom. Faculty of Philosophy & Oxford Martin School University of Oxford. “Existential Risk Prevention as Global Priority.” Global Policy (2012)]

These reflections on moral uncertainty suggest an alternative, complementary way of looking at existential risk; they also suggest a new way of thinking about the ideal of sustainability. Let me elaborate.¶ Our present understanding of axiology might well be confused. We may not now know — at least not in concrete detail — what outcomes would count as a big win for humanity; we might not even yet be able to imagine the best ends of our journey. If we are indeed profoundly uncertain about our ultimate aims, then we should recognize that there is a great option value in preserving — and ideally improving — our ability to recognize value and to steer the future accordingly. Ensuring that there will be a future version of humanity with great powers and a propensity to use them wisely is plausibly the best way available to us to increase the probability that the future will contain a lot of value. To do this, we must prevent any existential catastrophe.

### 1AC – Meltdowns

#### Meltdowns are inevitable – other models are flawed

Max - Planck- Gesselschaft 12 –The Max Planck Society for the Advancement of Science is a formally independent non-governmental and non-profit association of German research institute (Max-Planck-Gesellschaft, Major Reactor, 5-22-2012, "Severe nuclear reactor accidents likely every 10 to 20 years, European study suggests," ScienceDaily, <https://www.sciencedaily.com/releases/2012/05/120522134942.htm>) LADI

Fukushima are more likely to happen than previously assumed. Based on the operating hours of all civil nuclear reactors and the number of nuclear meltdowns that have occurred, scientists at the Max Planck Institute for Chemistry in Mainz have calculated that such events may occur once every 10 to 20 years (based on the current number of reactors) -- some 200 times more often than estimated in the past. The researchers also determined that, in the event of such a major accident, half of the radioactive caesium-137 would be spread over an area of more than 1,000 kilometres away from the nuclear reactor. Their results show that Western Europe is likely to be contaminated about once in 50 years by more than 40 kilobecquerel of caesium-137 per square meter. According to the International Atomic Energy Agency, an area is defined as being contaminated with radiation from this amount onwards. In view of their findings, the researchers call for an in-depth analysis and reassessment of the risks associated with nuclear power plants. The reactor accident in Fukushima has fuelled the discussion about nuclear energy and triggered Germany's exit from their nuclear power program. It appears that the global risk of such a catastrophe is higher than previously thought, a result of a study carried out by a research team led by Jos Lelieveld, Director of the Max Planck Institute for Chemistry in Mainz: "After Fukushima, the prospect of such an incident occurring again came into question, and whether we can actually calculate the radioactive fallout using our atmospheric models." According to the results of the study, a nuclear meltdown in one of the reactors in operation worldwide is likely to occur once in 10 to 20 years. Currently, there are 440 nuclear reactors in operation, and 60 more are planned. To determine the likelihood of a nuclear meltdown, the researchers applied a simple calculation. They divided the operating hours of all civilian nuclear reactors in the world, from the commissioning of the first up to the present, by the number of reactor meltdowns that have actually occurred. The total number of operating hours is 14,500 years, the number of reactor meltdowns comes to four -- one in Chernobyl and three in Fukushima. This translates into one major accident, being defined according to the International Nuclear Event Scale (INES), every 3,625 years. Even if this result is conservatively rounded to one major accident every 5,000 reactor years, the risk is 200 times higher than the estimate for catastrophic, non-contained core meltdowns made by the U.S. Nuclear Regulatory Commission in 1990. The Mainz researchers did not distinguish ages and types of reactors, or whether they are located in regions of enhanced risks, for example by earthquakes. After all, nobody had anticipated the reactor catastrophe in Japan.

#### Contamination spreads rapidly – no one is safe

Max - Planck- Gesselschaft 12 –The Max Planck Society for the Advancement of Science is a formally independent non-governmental and non-profit association of German research institute (Max-Planck-Gesellschaft, Major Reactor, 5-22-2012, "Severe nuclear reactor accidents likely every 10 to 20 years, European study suggests," ScienceDaily, https://www.sciencedaily.com/releases/2012/05/120522134942.htm) LADI

25 percent of the radioactive particles are transported further than 2,000 kilometres Subsequently, the researchers determined the geographic distribution of radioactive gases and particles around a possible accident site using a computer model that describes Earth's atmosphere. The model calculates meteorological conditions and flows, and also accounts for chemical reactions in the atmosphere. The model can compute the global distribution of trace gases, for example, and can also simulate the spreading of radioactive gases and particles. To approximate the radioactive contamination, the researchers calculated how the particles of radioactive caesium-137 (137Cs) disperse in the atmosphere, where they deposit on Earth's surface and in what quantities. The 137Cs isotope is a product of the nuclear fission of uranium. It has a half-life of 30 years and was one of the key elements in the radioactive contamination following the disasters of Chernobyl and Fukushima. The computer simulations revealed that, on average, only eight percent of the 137Cs particles are expected to deposit within an area of 50 kilometres around the nuclear accident site. Around 50 percent of the particles would be deposited outside a radius of 1,000 kilometres, and around 25 percent would spread even further than 2,000 kilometres. These results underscore that reactor accidents are likely to cause radioactive contamination well beyond national borders. The results of the dispersion calculations were combined with the likelihood of a nuclear meltdown and the actual density of reactors worldwide to calculate the current risk of radioactive contamination around the world. According to the International Atomic Energy Agency (IAEA), an area with more than 40 kilobecquerels of radioactivity per square meter is defined as contaminated. The team in Mainz found that in Western Europe, where the density of reactors is particularly high, the contamination by more than 40 kilobecquerels per square meter is expected to occur once in about every 50 years. It appears that citizens in the densely populated southwestern part of Germany run the worldwide highest risk of radioactive contamination, associated with the numerous nuclear power plants situated near the borders between France, Belgium and Germany, and the dominant westerly wind direction. If a single nuclear meltdown were to occur in Western Europe, around 28 million people on average would be affected by contamination of more than 40 kilobecquerels per square meter. This figure is even higher in southern Asia, due to the dense populations. A major nuclear accident there would affect around 34 million people, while in the eastern USA and in East Asia this would be 14 to 21 million people. "Germany's exit from the nuclear energy program will reduce the national risk of radioactive contamination. However, an even stronger reduction would result if Germany's neighbours were to switch off their reactors," says Jos Lelieveld. "Not only do we need an in-depth and public analysis of the actual risks of nuclear accidents. In light of our findings I believe an internationally coordinated phasing out of nuclear energy should also be considered ," adds the atmospheric chemist.

#### Fukushima proves the damage to the environment and human health is irreversible

Rosen 12 -- Dr Alex Rosen, University Clinic Düsseldorf, Department of General Pediatrics, (“Effects of the Fukushima nuclear meltdowns on environment and health” March 9th, 2012, <https://www.ippnw.de/commonFiles/pdfs/Atomenergie/FukushimaBackgroundPaper.pdf>) LADI

The Tōhoku earthquake on March 11th, 2011 led to multiple nuclear meltdowns in the reactors of the Fukushima Daiichi nuclear power plant in Northern Japan. Radioactive emissions from the plant caused widespread radioactive contamination of the entire region. The vast majority of the nuclear fallout occurred over the North Pacific, constituting the largest radioactive contamination of the oceans ever recorded. Soil and water samples, as well as marine animals have been found to be highly contaminated. Increased levels of radioactivity were recorded at all radiation measuring posts in the Northern Hemisphere. Fallout contaminated large parts of Eastern Honshu island, including the Tokyo metropolitan area. Within a 20 km radius, up to 200,000 people had to leave their homes. Outside of this evacuation zone, the radioactive fallout contaminated more than 870 km2 of land, home to about 70,000 people who were not evacuated. These people were exposed to harmful radioisotopes and now have an increased risk to develop cancer or other radiation-induced diseases. Many people still live in areas with high contamination. Food, milk and drinking water have been contaminated as well, leading to internal radiation exposure. Most severely affected are children, as their bodies are more susceptible to radiation damage. Preliminary tests have shown internal radioactive contamination of children with iodine-131 and caesium-137. It is too early to estimate the extent of health effects caused by the nuclear disaster. Taking into consideration the studies on Chernobyl survivors and the findings of the BEIR VII report, scientists will be able to estimate the effects once the true extent of radioactive emissions, fallout and contamination are better studied. Large-scale independent epidemiological studies are needed in order to better help the victims of this catastrophe. Claims by scientists affiliated with the nuclear industry that no health effects are to be expected are unscientific and immoral.

#### It’s the single greatest danger to the environment

Stapleton 9 - Richard M Stapleton Is the author of books such as Lead Is a Silent Hazard, writes for pollution issues (“Disasters: Nuclear Accidents” <http://www.pollutionissues.com/Co-Ea/Disasters-Nuclear-Accidents.html>) LADI

Of all the environmental disaster events that humans are capable of causing, nuclear disasters have the greatest damage potential. The radiation release associated with a nuclear disaster poses significant acute and chronic risks in the immediate environs and chronic risk over a wide geographic area. Radioactive contamination, which typically becomes airborne, is long-lived, with half-lives guaranteeing contamination for hundreds of years. Concerns over potential nuclear disasters center on nuclear reactors, typically those used to generate electric power. Other concerns involve the transport of nuclear waste and the temporary storage of spent radioactive fuel at nuclear power plants. The fear that terrorists would target a radiation source or create a "dirty bomb" capable of dispersing radiation over a populated area was added to these concerns following the 2001 terrorist attacks on New York City and Washington, D.C. Radioactive emissions of particular concern include strontium-90 and cesium-137, both having thirty-year-plus half-lives, and iodine-131, having a short half-life of eight days but known to cause thyroid cancer. In addition to being highly radioactive, cesium-137 is mistaken for potassium by living organisms. This means that it is passed on up the food chain and bioaccumulated by that process. Strontium-90 mimics the properties of calcium and is deposited in bones where it may either cause cancer or damage bone marrow cells.

#### Biodiversity loss risks extinction - ecosystems aren’t resilient or redundant

Vule 13-School of Biological Sciences, Louisiana Tech University (Jeffrey V. Yule \*, Robert J. Fournier and Patrick L. Hindmarsh, “Biodiversity, Extinction, and Humanity’s Future: The Ecological and Evolutionary Consequences of Human Population and Resource Use”, 2 April 2013, manities 2013, 2, 147–159) LADI

Ecologists recognize that the particulars of the relationship between biodiversity and community resilience in the face of disturbance (a broad range of phenomena including anything from drought, fire, and volcanic eruption to species introductions or removals) depend on context [16,17]. Sometimes disturbed communities return relatively readily to pre-disturbance conditions; sometimes they do not. However, accepting as a general truism that biodiversity is an ecological stabilizer is sensible— roughly equivalent to viewing seatbelt use as a good idea: although seatbelts increase the risk of injury in a small minority of car accidents, their use overwhelmingly reduces risk. As humans continue to modify natural environments, we may be reducing their ability to return to pre-disturbance conditions. The concern is not merely academic. Communities provide the ecosystem services on which both human and nonhuman life depends, including the cycling of carbon dioxide and oxygen by photosynthetic organisms, nitrogen fixation and the filtration of water by microbes, and pollination by insects. If disturbances alter communities to the extent that they can no longer provide these crucial services, extinctions (including, possibly, our own) become more likely. In ecology as in science in general, absolutes are rare. Science deals mainly in probabilities, in large part because it attempts to address the universe’s abundant uncertainties. Species-rich, diverse communities characterized by large numbers of multi-species interactions are not immune to being pushed from one relatively stable state characterized by particular species and interactions to other, quite different states in which formerly abundant species are entirely or nearly entirely absent. Nonetheless, in speciose communities, the removal of any single species is less likely to result in radical change. That said, there are no guarantees that the removal of even a single species from a biodiverse community will not have significant, completely unforeseen consequences. Indirect interactions can be unexpectedly important to community structure and, historically, have been difficult to observe until some form of disturbance (especially the introduction or elimination of a species) occurs. Experiments have revealed how the presence of predators can increase the diversity of prey species in communities, as when predators of a superior competitor among prey species will allow inferior competing prey species to persist [18]. Predators can have even more dramatic effects on communities. The presence or absence of sea otters determines whether inshore areas are characterized by diverse kelp forest communities or an alternative stable state of species poor urchin barrens [19]. In the latter case, the absence of otters leaves urchin populations unchecked to overgraze kelp forests, eliminating a habitat feature that supports a wide range of species across a variety of age classes. Aldo Leopold observed that when trying to determine how a device works by tinkering with it, the first rule of doing the job intelligently is to save all the parts [20]. The extinctions that humans have caused certainly represent a significant problem, but there is an additional difficulty with human investigations of and impacts on ecological and evolutionary processes. Often, our tinkering is unintentional and, as a result, recklessly ignores the necessity of caution. Following the logic inherited from Newtonian physics, humans expect single actions to have single effects. Desiring more game species, for instance, humans typically hunt predators (in North America, for instance, extirpating wolves so as to be able to have more deer or elk for themselves). Yet removing or adding predators has far reaching effects. Wolf removal has led to prey overpopulation, plant over browsing, and erosion [21]. After wolves were removed from Yellowstone National Park, the K of elk increased. This allowed for a shift in elk feeding patterns that left fewer trees alongside rivers, thus leaving less food for beaver and, consequently, fewer beaver dams and less wetland [22,23]. Such a situation represents, in microcosm, the inherent risk of allowing for the erosion of species diversity. In addition to providing habitat for a wide variety of species, wetlands serve as natural water purification systems. Although the Yellowstone region might not need that particular ecosystem service as much as other parts of the world, freshwater resources and wetlands are threatened globally, and the same logic of reduced biodiversity equating to reduced ecosystem services applies. Humans take actions without considering that when tugging on single threads, they unavoidably affect adjacent areas of the tapestry. While human population and per capita resource use remain high, so does the probability of ongoing biodiversity loss. At the very least, in the future people will have an even more skewed perspective than we do about what constitutes a diverse community. In that regard, future generations will be even more ignorant than we are. Of course, we also experience that shifting baseline perspective on biodiversity and population sizes, failing to recognize how much is missing from the world because we are unaware of what past generations saw [11]. But the consequences of diminished biodiversity might be more profound for humans than that. If the disturbance of communities and ecosystems results in species losses that reduce the availability of ecosystem services, human K and, sooner or later, human N will be reduced.

#### Try or die—only a shift away from consumption focused energy production towards communal energy prevents ecological catastrophe and ensures sustainable alternative energy, neither coal, nor other renewables are good enough

Byrne et al 09 - John Byrne - Distinguished Professor of Energy Climate Policy at the University of Delaware, Cecilia Martinez - research professor at the Center for Energy and Environmental Policy, University of Delaware, Colin Ruggero - PhD Candidate at the New School for Social Research, teaching Sociology at the Community College of Philadelphia: (“Relocating Energy in the Social Commons Ideas for a Sustainable Energy Utility”, Sagepub Journals, Available at http://bst.sagepub.com/content/29/2/81.full.pdf+html, Accessed 8/13/16)IG

Shedding the institutions that created the prospect of climate change will not happen on the watch of the green titans or extra large nuclear power. The modern cornucopian political economy fueled by abundant, carbon-free energy machines will, in fact, risk the possibility of climate change continually because of the core properties of the modern institutional design. Although the abundant energy machine originated and matured in the United States and industrial Europe, the logic of unending growth built into the modern model has promoted its global spread. Today, both extra-large nuclear power and industrial-scale renewables are at the forefront of the trillion dollar clean energy technology development and transfer process envisioned for the globe (International Energy Agency, 2006). Nuclear energy is seen as offering unlimited potential for rapid development in India and China, while large-scale renewables seamlessly fit into existing international financial aid schemes. A burgeoning renewables industry boasts economic opportunities in standardization and certification for delivering green titans to developing countries. If institutional change is to occur, if energy-society relations are to be transformed, and if the threat of global warming is to be earnestly addressed, we will have to design and experiment with alternatives other than these. Given the global character of the challenge, cookie cutter counter-strategies are certain to fail. Often, outside the box alternatives may not be sensible in the modern context. Like a paradigm shift, we need ideas, and actions guided by them, which fail in one context (here, specifically, the context of energy obesity) in order hopefully to support the appearance of a new context. The concept and practice of a sustainable energy utility is offered in this spirit.11 The sustainable energy utility (SEU) involves the creation of an institution with the explicit purpose of enabling communities to reduce and eventually eliminate use of obese energy resources and reliance on obese energy organizations. It is formed as a nonprofit organization to support commons energy development and management. Unlike its for-profit contemporaries, it has no financial or other interest in commodification of energy, ecological, or social relations; its success lies wholly in the creation of shared benefits and responsibilities. The SEU is not a panacea nor is it a blueprint for fixing our energy-carbon problems. It is a strategy to change energy-ecology-society relations. It may not work, but we believe it is worth the effort to invent and pursue the possibility. There should be little doubt about the difficulty of the task. Regimes develop through the interplay of technology and society over time, rather than through prescribed programs. They alter history and then seek to prevent its change, except in ways that bolster regime power. Of specific importance here, obese utilities will not simply cede political and economic success to an antithetical institution—the SEU. That is why change is so hard to realize. Shifting a society towards a new energy regime requires diverse actors working in tandem, across all areas of regime influence. Economic models, political will, social norm development, all these things must be shifted, rather than pulled, from the current paradigm. The SEU constructs energy–ecology-society relations as phenomena of a commons governance regime. It explicitly reframes the preeminent obese energy regime organization—the energy utility—in the antithetical context of using less energy. And, when energy use is needed, it relies on renewable sources available to and therefore governable by the community of users (rather than the titan technology approach of governance by producers). In contrast to the cornucopian strategy of expanding inputs in an effort to endlessly feed the obese regime, the SEU focuses on techniques and social arrangements which can serve the aims of sustainability and equity. It combines political and economic change for the purpose of building a postmodern energy commons; that is, a form of political economy that relies on commons, rather than commodity, relations for its evolution. Specifically, it uses the ideas of a commonwealth economy and a community trust to achieve the goal of postmodern energy sustainability. The meanings of commonwealth, community trust, and commons, relevant to a SEU, are explored below.

### 1AC – Prolif

#### Nuclear Power multiplies the risk for nuclear proliferation and nuclear terror – safeguards are uncertain and nuclear power weakens them

Miller and Sagan 9 - Steven E. Miller, Director, International Security Program; Editor-in-Chief, International Security; Co-Principal Investigator, Project on Managing the Atom, Scott Sagan, Former Research Fellow, International Security Program, 1981-1982; Editorial Board Member, Quarterly Journal: International Security ("Nuclear Power Without Nuclear Proliferation?" Journal Article, Daedalus, volume 138, issue 4, pages 7-18, <http://belfercenter.hks.harvard.edu/publication/19850/nuclear_power_without_nuclear_proliferation.html>) LADI

Today, the Cold War has disappeared but thousands of those weapons have not. In a strange turn of history, the threat of global nuclear war has gone down, but the risk of a nuclear attack has gone up. More nations have acquired these weapons. Testing has continued. Black market trade in nuclear secrets and nuclear materials abound. The technology to build a bomb has spread. Terrorists are determined to buy, build or steal one. Our efforts to contain these dangers are centered on a global non-proliferation regime, but as more people and nations break the rules, we could reach the point where the center cannot hold.

—President Barack Obama Prague, April 5, 2009

The global nuclear order is changing. Concerns about climate change, the volatility of oil prices, and the security of energy supplies have contributed to a widespread and still-growing interest in the future use of nuclear power. Thirty states operate one or more nuclear power plants today, and according to the International Atomic Energy Agency (IAEA), some 50 others have requested technical assistance from the agency to explore the possibility of developing their own nuclear energy programs. It is certainly not possible to predict precisely how fast and how extensively the expansion of nuclear power will occur. But it does seem probable that in the future there will be more nuclear technology spread across more states than ever before. It will be a different world than the one that has existed in the past.

This surge of interest in nuclear energy — labeled by some proponents as "the renaissance in nuclear power" — is, moreover, occurring simultaneously with mounting concern about the health of the nuclear nonproliferation regime, the regulatory framework that constrains and governs the world's civil and military-related nuclear affairs. The Nuclear Non-Proliferation Treaty (NPT) and related institutions have been taxed by new worries, such as the growth in global terrorism, and have been painfully tested by protracted crises involving nuclear weapons proliferation in North Korea and potentially in Iran. (Indeed, some observers suspect that growing interest in nuclear power in some countries, especially in the Middle East, is not unrelated to Iran's uranium enrichment program and Tehran's movement closer to a nuclear weapons capability.) Confidence in the NPT regime seems to be eroding even as interest in nuclear power is expanding.

This realization raises crucial questions for the future of global security. Will the growth of nuclear power lead to increased risks of nuclear weapons proliferation and nuclear terrorism? Will the nonproliferation regime be adequate to ensure safety and security in a world more widely and heavily invested in nuclear power? The authors in this two-volume (Fall 2009 and Winter 2010) special issue of Dædalus have one simple and clear answer to these questions: It depends.

On what will it depend? Unfortunately, the answer to that question is not so simple and clear, for the technical, economic, and political factors that will determine whether future generations will have more nuclear power without more nuclear proliferation are both exceedingly complex and interrelated. How rapidly and in which countries will new nuclear power plants be built? Will the future expansion of nuclear energy take place primarily in existing nuclear power states or will there be many new entrants to the field? Which countries will possess the facilities for enriching uranium or reprocessing plutonium, technical capabilities that could be used to produce either nuclear fuel for reactors or the materials for nuclear bombs? How can physical protection of nuclear materials from terrorist organizations best be ensured? How can new entrants into nuclear power generation best maintain safety to prevent accidents? The answers to these questions will be critical determinants of the technological dimension of our nuclear future.

The major political factors influencing the future of nuclear weapons are no less complex and no less important. Will Iran acquire nuclear weapons; will North Korea develop more weapons or disarm in the coming decade; how will neighboring states respond? Will the United States and Russia take significant steps toward nuclear disarmament, and if so, will the other nuclear-weapons states follow suit or stand on the sidelines?

The nuclear future will be strongly influenced, too, by the success or failure of efforts to strengthen the international organizations and the set of agreements that comprise the system developed over time to manage global nuclear affairs. Will new international or regional mechanisms be developed to control the front-end (the production of nuclear reactor fuel) and the back-end (the management of spent fuel containing plutonium) of the nuclear fuel cycle? What political agreements and disagreements are likely to emerge between the nuclear-weapons states (NWS) and the non-nuclear-weapons states (NNWS) at the 2010 NPT Review Conference and beyond? What role will crucial actors among the NNWS — Japan, Iran, Brazil, and Egypt, for example — play in determining the global nuclear future? And most broadly, will the nonproliferation regime be supported and strengthened or will it be questioned and weakened? As IAEA Director General Mohamed ElBaradei has emphasized, "The nonproliferation regime is, in many ways, at a critical juncture," and there is a need for a new "overarching multilateral nuclear framework."1 But there is no guarantee that such a framework will emerge, and there is wide doubt that the arrangements of the past will be adequate to manage our nuclear future effectively.

#### Risk of nuclear terrorism is real and high now – largest threat of extinction

Bunn et al 14 [Matthew, Professor of Practice at the Harvard Kennedy School, with Martin Malin, Executive Director of the Project on Managing the Atom at the Belfer Center for Science and International Affairs at Harvard’s Kennedy School of Government, Nickolas Roth, Research Associate at the Project on Managing the Atom, and William Tobey, Senior Fellow at the Belfer Center for Science and International Affairs, March, “Advancing Nuclear Security: Evaluating Progress and Setting New Goals,” *The Project on Managing the Atom*, pg. 5-9/AKG]

Unfortunately, nuclear and radiological terrorism remain real and dangerous threats.1 The conclusion the assembled leaders reached at the Washington Nuclear Security Summit and reaffirmed in Seoul remains correct: “Nuclear terrorism continues to be one of the most challenging threats to international security. Defeating this threat requires strong national measures and international cooperation given its potential global political, economic, social, and psychological consequences.”2 There are three types of nuclear or radiological terrorist attack: • Nuclear weapons. Terrorists might be able to get and detonate an assembled nuclear weapon made by a state, or make a crude nuclear bomb from stolen separated plutonium or HEU. This would be the most difficult type of nuclear terrorism for terrorists to accomplish—but the devastation could be absolutely horrifying, with political and economic aftershocks reverberating around the world. • “Dirty bombs.” A far simpler approach would be for terrorists to obtain radiological materials—available in hospitals, industrial sites, and more—and disperse them to contaminate an area with radioactivity, using explosives or any number of other means. In most scenarios of such attacks, few people would die from the radiation—but the attack could spread fear, force the evacuation of many blocks of a major city, and inflict billions of dollars in costs of cleanup and economic disruption. While a dirty bomb attack would be much easier for terrorists to carry out than an attack using a nuclear explosive, the consequences would be far less—an expensive and disruptive mess, but not the heart of a major city going up in smoke. • Nuclear sabotage. Terrorists could potentially cause a Fukushima-like meltdown at a nuclear reactor or sabotage a spent fuel pool or high-level waste store. An unsuccessful sabotage would have little effect, but a successful one could spread radioactive material over a huge area. Both the scale of the consequences and the difficulty of carrying out a successful attack would be intermediate between nuclear weapons and dirty bombs. Overall, while actual terrorist use of a nuclear weapon may be the least likely of these dangers, its consequences would be so overwhelming that we believe it poses the most significant risk. A similar judgment drove the decision to focus the four-year effort on securing nuclear weapons and the materials needed to make them. Most of this report will focus on the threat of terrorist use of nuclear explosives, but the overall global governance framework for nuclear security is relevant to all of these dangers. The danger of nuclear terrorism is driven by three key factors—terrorist intent to escalate to the nuclear level of violence; potential terrorist capability to do so; and the vulnerability of nuclear weapons and the materials needed to enable terrorists to carry out such an attack—the motive, means, and opportunity of a monstrous crime. Terrorist intent. While most terrorist groups are still focused on small-scale violence for local political purposes, we now live in an age that includes some groups intent on inflicting large-scale destruction to achieve their objectives. Over the past quarter century, both al Qaeda and the Japanese terror cult Aum Shinrikyo seriously sought nuclear weapons and the nuclear materials and expertise needed to make them. Al Qaeda had a focused program reporting directly to Ayman al-Zawahiri (now head of the group), which progressed as far as carrying out crude but sensible conventional explosive tests for the nuclear program in the desert of Afghanistan. There is some evidence that North Caucusus terrorists also sought nuclear weapons—including incidents in which terrorist teams were caught carrying out reconnaissance on Russian nuclear weapon storage sites, whose locations are secret.3 Despite the death of Osama bin Laden and the severe disruption of the core of al Qaeda, there are no grounds for complacency. There is every reason to believe Zawahiri remains eager to inflict destruction on a nuclear scale. Indeed, despite the large number of al Qaeda leaders who have been killed or captured, nearly all of the key players in al Qaeda’s nuclear program remain alive and at large—including Abdel Aziz al-Masri, an Egyptian explosives expert who was al Qaeda’s “nuclear CEO.” In 2003, when al Qaeda operatives were negotiating to buy three of what they thought were nuclear weapons, senior al Qaeda officials told them to go ahead and make the purchase if a Pakistani expert with equipment confirmed the items were genuine. The US government has never managed to determine who the Pakistani nuclear weapons expert was in whom al Qaeda had such confidence—and what he may have been doing in the intervening decade. More fundamentally, with at least two, and probably three, groups having gone down this path in the past 25 years, there is no reason to expect they will be the last. The danger of nuclear terrorism will remain as long as nuclear weapons, the materials needed to make them, and terrorist groups bent on large-scale destruction co-exist. Potential terrorist capabilities. No one knows what capabilities a secret cell of al Qaeda may have managed to retain or build. Unfortunately, it does not take a Manhattan Project to make a nuclear bomb—indeed, over 90 percent of the Manhattan Project effort was focused on making the nuclear materials, not on designing and building the weapons. Numerous studies by the United States and other governments have concluded that it is plausible that a sophisticated terrorist group could make a crude nuclear bomb if it got enough separated plutonium or HEU.4 A “gun-type” bomb, such as the weapon that obliterated Hiroshima, fundamentally involves slamming two pieces of HEU together at high speed. An “implosion-type” bomb, which is needed to get a sub-stantial explosive yield from plutonium, requires crushing nuclear material to a higher density—a more complex task, but still plausible for terrorists, especially if they got knowledgeable help. Many analysts argue that, since states spend billions of dollars and assign hundreds or thousands of people to building nuclear weapons, it is totally implausible that terrorists could carry out this task. Unfortunately, this argument is wrong, for two reasons. First, as the Manhattan Project statistic suggests, the difficult part of making a nuclear bomb is making the nuclear material. That is what states spend billions seeking to accomplish. Terrorists are highly unlikely to ever be able to make their own bomb material—but if they could get stolen material, that step would be bypassed. Second, it is far easier to make a crude, unsafe, unreliable bomb of uncertain yield, which might be delivered in the back of a truck, than to make the kind of nuclear weapon a state would want in its arsenal—a safe, reliable weapon of known yield that can be delivered by missile or combat aircraft. It is highly unlikely terrorists will ever be able to build that kind of nuclear weapon. Remaining vulnerabilities. While many countries have done a great deal to strengthen nuclear security, serious vulnerabilities remain. Around the world, there are stocks of nuclear weapons or materials whose security systems are not sufficient to protect against the full range of plausible outsider and insider threats they may face. As incidents like the intrusion at Y-12 in the United States in 2012 make clear, many nuclear facilities and transporters still grapple with serious problems of security culture. It is fair to say that every country where nuclear weapons, weapons-usable nuclear materials, major nuclear facilities, or dangerous radiological sources exist has more to do to ensure that these items are sustainably secured and accounted for. At least three lines of evidence confirm that important nuclear security weaknesses continue to exist. First, seizures of stolen HEU and separated plutonium continue to occur, including, mostly recently HEU seizures in 2003, 2006, 2010, and 2011.5 These seizures may result from material stolen long ago, but, at a minimum, they make clear that stocks of HEU and plutonium remain outside of regulatory control. Second, in cases where countries do realistic tests to probe whether security systems can protect against teams of clever adversaries determined to find a weak point, the adversaries sometimes succeed—even when their capabilities are within the set of threats the security system is designed to protect against. This happens with some regularity in the United States (though less often than before the 9/11 attacks); if more countries carried out comparable performance tests, one would likely see similar results. Third, in real non-nuclear thefts and terrorist attacks around the world, adversaries sometimes demonstrate capabilities and tactics well beyond what many nuclear security systems would likely be able to handle (see the discussion of the recent Västberga incident in Sweden). Of course, the initial theft of nuclear material would be only the first step. Adversaries would have to smuggle the material to wherever they wanted to make their bomb, and ultimately to the target. A variety of measures have been put in place in recent years to try to stop nuclear smuggling, from radiation detectors to national teams trained and equipped to deal with nuclear smuggling cases—and more should certainly be done. But once nuclear material has left the facility where it is supposed to be, it could be anywhere, and finding and recovering it poses an enormous challenge. The immense length of national borders, the huge scale of legitimate traffic, the myriad potential pathways across these borders, and the small size and weak radiation signal of the materials needed to make a nuclear bomb make nuclear smuggling extraordinarily difficult to stop. There is also the danger that a state such as North Korea might consciously decide to provide nuclear weapons or the materials needed to make them to terrorists. This possibility cannot be ruled out, but there is strong reason to believe that such conscious state decisions to provide these capabilities are a small part of the overall risk of nuclear terrorism. Dictators determined to maintain their power are highly unlikely to hand over the greatest weapon they have to terrorist groups they cannot control, who might well use it in ways that would provoke retaliation that would remove the dictator from power forever. Although nuclear forensics is by no means perfect, it would be only one of many lines of evidence that could potentially point back to the state that provided the materials; no state could ever be confident they could make such a transfer withoutbeing caught.6 And terrorists are unlikely to have enough money to make a substantial difference in either the odds of regime survival or the wealth of a regime’s elites, even in North Korea, one of the poorest countries on earth. On the other hand, serious risks would arise in North Korea, or other nuclear-armed states, in the event of state collapse—and as North Korea’s stockpile grows, one could imagine a general managing some of that stockpile concluding he could sell a piece of it and provide a golden parachute for himself and his family without getting caught. No one knows the real likelihood of nuclear terrorism. But the consequences of a terrorist nuclear blast would be so catastrophic that even a small chance is enough to justify urgent action to reduce the risk. The heart of a major city could be reduced to a smoldering radioactive ruin, leaving tens to hundreds of thousands of people dead. The perpetrators or others might claim to have more weapons already hidden in other major cities and threaten to set them off if their demands were not met—potentially provoking uncontrolled evacuation of many urban centers. Devastating economic consequences would reverberate worldwide. Kofi Annan, while serving as Secretary-General of the United Nations, warned that the global economic effects of a nuclear terrorist attack in a major city would push “tens of millions of people into dire poverty,” creating a “second death toll throughout the developing world.”7

#### It overwhelms barriers for expertise

Ackland 9 - Len Ackland, co-director of the Center for Environmental Journalism., (“Weapons proliferation a big risk with nuclear power” February 10, 2009, <http://www.cejournal.net/?p=903>) LADI

As Tom Yulsman points out in his Feb. 5 posting, the tight connection between nuclear power and nuclear weapons is seriously underplayed and often ignored in discussions about the so-called “need” for nuclear power to help meet energy demand while addressing global warming concerns. (Issues including accidents, terrorism, high-level nuclear waste disposal and economic costs are also important, but I won’t deal with them in this brief commentary.) While Tom mentions the concern over plutonium, which I’ll return to momentarily in responding to the questions from the commenter on the Feb. 5 post, remember that the convergence between nuclear power and weapons occurs at two points in the nuclear “fuel cycle” — the cradle-to-grave process beginning with uranium mining and ending with nuclear waste or incredible explosions. The first power-weapons crossover comes during uranium “enrichment,” after uranium ore is milled to extract uranium in the form called “yellow cake” that is then converted to uranium hexafluoride gas. Enrichment of the gas means increasing the amount of the fissile uranium-235 isotope, which comprises 0.7 percent of natural uranium, to the 3-6 percent needed to make fuel rods for commercial nuclear reactors. The same centrifuges (the modern technology of choice) that separate the U-235 from the U-238 can be kept running until the percentage of U-235 reaches about 90 percent and can be used for the kind of nuclear bomb that destroyed Hiroshima. Enrichment — low for nuclear power plants and high for bombs — is at the heart of the current controversy over Iran’s plans and capabilities. The second power-weapons crossover comes when low-enriched uranium fuel is burned in nuclear reactors, whether military, civilian, or dual use. Neutrons produced in the chain reaction are captured by the U-238 to form U-239 then neptunium-239 which decays into plutonium-239, the key fissile isotope for nuclear weapons. Other plutonium isotopes, such as Pu-240, Pu-241, and Pu-242 are also produced. The extent to which the uranium fuel elements are irradiated is called “fuel burnup.” Basically, military reactors designed specifically to produce Pu-239 burn the fuel for shorter periods, a few weeks, before the fuel rods are removed from the reactors in order to minimize the buildup of Pu-240 and other elements. Commercial reactors, aimed at maximizing the energy output in order to produce electricity, burn the fuel for a year or so before the fuel rod assemblies are changed out. The used or “spent” fuel contains higher percentages of the undesirable (for bomb builders) plutonium isotopes. Dual-use reactors, such as the one that caused the Chernobyl accident in 1986, tend toward the shorter fuel burnup times. The plutonium in the spent fuel is the 20,000 kilograms that the Federation of American Scientists estimates is produced each year by the world’s currently operating 438 reactors. Other sources estimate the amount of plutonium in spent fuel as much higher. For a good description of these issues, see David Albright, et. al., “Plutonium and Highly Enriched Uranium 1996: World Inventories, Capabilities and Policies,” SIPRI, Oxford U. Press, 1997. Finally, before the plutonium-239 created in nuclear reactors can be used in weapons, it must first be separated from the uranium, transuranics and other fission products. This is done in “reprocessing” plants and is often benignly referred to as plutonium recycling. Currently there are only a handful of commercial reprocessing facilities, the one in France and the one in the United Kingdom having operated the longest. Much of the plutonium extracted by these plants is mixed with uranium and reused for nuclear fuel in commercial reactors. But reprocessing plants also exist in countries using plutonium for nuclear weapons. Thus, North Korea, the most recent country to join the nine-member nuclear weapons “club,” made weapons through its reprocessing facility. The fact that a country like North Korea could accomplish the manufacture of nuclear weapons should give pause to those who advocate nuclear power plants as an answer to global warming. A plutonium economy and/or the presence of uranium enrichment facilities in many nations around the world are dangerous prospects. Even accepting the arguments that life-cycle analysis of nuclear plants — which takes into account the emissions from mining, construction and so forth — puts them on a par with renewable energy sources in terms of greenhouse gas emissions doesn’t overcome their disadvantages. And the assurance from nuclear advocates that the next generation of plants (Generation IV, still under development) will be more “proliferation resistant,” isn’t comforting given the technologists’ track record. And that still would be a long way from proliferation proof.

## 1AC – Struct Violence Impacts

### 1AC - Util

#### The standard is maximizing expected well-being.

#### Personal Identity is irrelevant, we can separate our brains and become separate streams of thought.

DerekParfit

Derek Parfit, Reasons and Persons (Oxford: Clarendon, 1984).

Some recent medical cases provide striking evidence in favour of the Reductionist View. Human beings have a lower brain and two upper hemispheres, which are connected by a bundle of fibres. In treating a few people with severe epilepsy, surgeons have cut these fibres. The aim was to reduce the severity of epileptic fits, by confining their causes to a single hemisphere. This aim was achieved. But the operations had another unintended consequence. The effect, in the words of one surgeon, was the creation of ‘two separate spheres of consciousness.’ This effect was revealed by various psychological tests. These made use of two facts. We control our right arms with our left hemispheres, and vice versa. And what is in the right halves of our visual fields we see with our left hemispheres, and vice versa. When someone’s hemispheres have been disconnected, psychologists can thus present to this person two different written questions in the two halves of his visual field, and can receive two different answers written by this person’s two hands

#### Given the absence of identity only utilitarianism makes sense

Shoemaker 99

Shoemaker, David (Dept of Philosophy, U Memphis). “Utilitarianism and Personal Identity.” *The Journal of Value Inquiry* 33: 183–199, 1999. <http://www.csun.edu/~ds56723/jvipaper.pdf>

Extreme reductionism might lend support to utilitarianism in the following way. Many people claim that we are justified in maximizing the good in our own lives, but not justified in maximizing the good across sets of lives, simply because each of us is a single, deeply unified person, unified by the further fact of identity, whereas there is no such corresponding unity across sets of lives. But if the only justification for the different treatment of individual lives and sets of lives is the further fact, and this fact is undermined by the truth of reductionism, then nothing justifies this different treatment. There are no deeply unified subjects of experience. What remains are merely the experiences themselves, and so any ethical theory distinguishing between individual lives and sets of lives is mistaken. If the deep, further fact is missing, then there are no unities. The morally significant units should then be the states people are in at particular times, and an ethical theory that focused on them and attempted to improve their quality, whatever their location, would be the most plausible. Utilitarianism is just such a theory

#### Only utilitarianism can serve as the basis to legitimately justify policy to the public. Government actions will inevitably lead to trade-offs between citizens. The only justifiable way to resolve these conflicts is utilitarianism.

Gary Woller [BYU Prof., “An Overview by Gary Woller”, A Forum on the Role of Environmental Ethics, June 1997, pg. 10]

Moreover, virtually all public policies entail some redistribution of economic or political resources, such that one group's gains must come at another group's ex- pense. Consequently, public policies in a democracy must be justified to the public, and especially to those who pay the costs of those policies. Such justification cannot simply be assumed a priori by invoking some higher-order moral principle. Appeals to a priori moral principles, such as environmental preservation, also often fail to acknowledge that public policies inevitably entail trade-offs among competing values. Thus since policymakers cannot justify inherent value conflicts to the public in any philosophical sense, and since public policies inherently imply winners and losers, the policymakers' duty to the public interest requires them to demonstrate that the redistributive effects and value trade-offs implied by their polices are somehow to the overall advantage of society. At the same time, deontologically based ethical systems have severe practical limitations as a basis for public policy. At best, [Also,] apriorimoral principles provide only general guidance to ethical dilemmas in public affairs and do not themselves suggest appropriate public policies, and at worst, they create a regimen of regulatory unreasonableness while failing to adequately address the problem or actually making it worse.For example, a moral obligation to preserve the environment by no means implies the best way, or any way for that matter, to do so, just as there is no a priori reason to believe that any policy that claims to preserve the environment will actually do so. Any number of policies might work, and others, although seemingly consistent with the moral principle, will fail utterly. That deontological principles are an inadequate basis for environmental policy is evident in the rather significant irony that most forms of deontologically based environmental laws and regulations tend to be implemented in a very utilitarian manner by street-level enforcement officials. Moreover, ignoring the relevant costs and benefits of environmental policy and their attendant incentive structures can, as alluded to above, actually work at cross purposes to environmental preservation. (There exists an extensive literature on this aspect of regulatory enforcement and the often perverse outcomes of regulatory policy. See, for example, Ackerman, 1981; Bartrip and Fenn, 1983; Hawkins, 1983, 1984; Hawkins and Thomas, 1984.) Even the most die-hard preservationist/deontologist would, I believe, be troubled by this outcome. The above points are perhaps best expressed by Richard Flathman, The number of values typically involved in public policy decisions, the broad categories which must be employed and above all, the scope and complexity of the consequences to be anticipated militate against reasoning so conclusively that they generate an imperative to institute a specific policy. It is seldom the case that only one policy will meet the criteria of the public interest (1958, p. 12). It therefore follows that in a democracy, policymakers have an ethical duty to establish a plausible link between policy alternatives and the problems they address, and the public must be reasonably assured that a policy will actually do something about an existing problem; this requires the means-end language and methodology of utilitarian ethics. Good intentions, lofty rhetoric, and moral piety are an insufficient though perhaps at times a necessary, basis for public policy in a democracy.

### 1AC – Meltdowns

#### Meltdowns are inevitable – other models are flawed

Max - Planck- Gesselschaft 12 –The Max Planck Society for the Advancement of Science is a formally independent non-governmental and non-profit association of German research institute (Max-Planck-Gesellschaft, Major Reactor, 5-22-2012, "Severe nuclear reactor accidents likely every 10 to 20 years, European study suggests," ScienceDaily, <https://www.sciencedaily.com/releases/2012/05/120522134942.htm>) LADI

Fukushima are more likely to happen than previously assumed. Based on the operating hours of all civil nuclear reactors and the number of nuclear meltdowns that have occurred, scientists at the Max Planck Institute for Chemistry in Mainz have calculated that such events may occur once every 10 to 20 years (based on the current number of reactors) -- some 200 times more often than estimated in the past. The researchers also determined that, in the event of such a major accident, half of the radioactive caesium-137 would be spread over an area of more than 1,000 kilometres away from the nuclear reactor. Their results show that Western Europe is likely to be contaminated about once in 50 years by more than 40 kilobecquerel of caesium-137 per square meter. According to the International Atomic Energy Agency, an area is defined as being contaminated with radiation from this amount onwards. In view of their findings, the researchers call for an in-depth analysis and reassessment of the risks associated with nuclear power plants. The reactor accident in Fukushima has fuelled the discussion about nuclear energy and triggered Germany's exit from their nuclear power program. It appears that the global risk of such a catastrophe is higher than previously thought, a result of a study carried out by a research team led by Jos Lelieveld, Director of the Max Planck Institute for Chemistry in Mainz: "After Fukushima, the prospect of such an incident occurring again came into question, and whether we can actually calculate the radioactive fallout using our atmospheric models." According to the results of the study, a nuclear meltdown in one of the reactors in operation worldwide is likely to occur once in 10 to 20 years. Currently, there are 440 nuclear reactors in operation, and 60 more are planned. To determine the likelihood of a nuclear meltdown, the researchers applied a simple calculation. They divided the operating hours of all civilian nuclear reactors in the world, from the commissioning of the first up to the present, by the number of reactor meltdowns that have actually occurred. The total number of operating hours is 14,500 years, the number of reactor meltdowns comes to four -- one in Chernobyl and three in Fukushima. This translates into one major accident, being defined according to the International Nuclear Event Scale (INES), every 3,625 years. Even if this result is conservatively rounded to one major accident every 5,000 reactor years, the risk is 200 times higher than the estimate for catastrophic, non-contained core meltdowns made by the U.S. Nuclear Regulatory Commission in 1990. The Mainz researchers did not distinguish ages and types of reactors, or whether they are located in regions of enhanced risks, for example by earthquakes. After all, nobody had anticipated the reactor catastrophe in Japan.

#### Contamination spreads rapidly – no one is safe

Max - Planck- Gesselschaft 12 –The Max Planck Society for the Advancement of Science is a formally independent non-governmental and non-profit association of German research institute (Max-Planck-Gesellschaft, Major Reactor, 5-22-2012, "Severe nuclear reactor accidents likely every 10 to 20 years, European study suggests," ScienceDaily, https://www.sciencedaily.com/releases/2012/05/120522134942.htm) LADI

25 percent of the radioactive particles are transported further than 2,000 kilometres Subsequently, the researchers determined the geographic distribution of radioactive gases and particles around a possible accident site using a computer model that describes Earth's atmosphere. The model calculates meteorological conditions and flows, and also accounts for chemical reactions in the atmosphere. The model can compute the global distribution of trace gases, for example, and can also simulate the spreading of radioactive gases and particles. To approximate the radioactive contamination, the researchers calculated how the particles of radioactive caesium-137 (137Cs) disperse in the atmosphere, where they deposit on Earth's surface and in what quantities. The 137Cs isotope is a product of the nuclear fission of uranium. It has a half-life of 30 years and was one of the key elements in the radioactive contamination following the disasters of Chernobyl and Fukushima. The computer simulations revealed that, on average, only eight percent of the 137Cs particles are expected to deposit within an area of 50 kilometres around the nuclear accident site. Around 50 percent of the particles would be deposited outside a radius of 1,000 kilometres, and around 25 percent would spread even further than 2,000 kilometres. These results underscore that reactor accidents are likely to cause radioactive contamination well beyond national borders. The results of the dispersion calculations were combined with the likelihood of a nuclear meltdown and the actual density of reactors worldwide to calculate the current risk of radioactive contamination around the world. According to the International Atomic Energy Agency (IAEA), an area with more than 40 kilobecquerels of radioactivity per square meter is defined as contaminated. The team in Mainz found that in Western Europe, where the density of reactors is particularly high, the contamination by more than 40 kilobecquerels per square meter is expected to occur once in about every 50 years. It appears that citizens in the densely populated southwestern part of Germany run the worldwide highest risk of radioactive contamination, associated with the numerous nuclear power plants situated near the borders between France, Belgium and Germany, and the dominant westerly wind direction. If a single nuclear meltdown were to occur in Western Europe, around 28 million people on average would be affected by contamination of more than 40 kilobecquerels per square meter. This figure is even higher in southern Asia, due to the dense populations. A major nuclear accident there would affect around 34 million people, while in the eastern USA and in East Asia this would be 14 to 21 million people. "Germany's exit from the nuclear energy program will reduce the national risk of radioactive contamination. However, an even stronger reduction would result if Germany's neighbours were to switch off their reactors," says Jos Lelieveld. "Not only do we need an in-depth and public analysis of the actual risks of nuclear accidents. In light of our findings I believe an internationally coordinated phasing out of nuclear energy should also be considered ," adds the atmospheric chemist.

#### Fukushima proves the damage to the environment and human health is irreversible

Rosen 12 -- Dr Alex Rosen, University Clinic Düsseldorf, Department of General Pediatrics, (“Effects of the Fukushima nuclear meltdowns on environment and health” March 9th, 2012, <https://www.ippnw.de/commonFiles/pdfs/Atomenergie/FukushimaBackgroundPaper.pdf>) LADI

The Tōhoku earthquake on March 11th, 2011 led to multiple nuclear meltdowns in the reactors of the Fukushima Daiichi nuclear power plant in Northern Japan. Radioactive emissions from the plant caused widespread radioactive contamination of the entire region. The vast majority of the nuclear fallout occurred over the North Pacific, constituting the largest radioactive contamination of the oceans ever recorded. Soil and water samples, as well as marine animals have been found to be highly contaminated. Increased levels of radioactivity were recorded at all radiation measuring posts in the Northern Hemisphere. Fallout contaminated large parts of Eastern Honshu island, including the Tokyo metropolitan area. Within a 20 km radius, up to 200,000 people had to leave their homes. Outside of this evacuation zone, the radioactive fallout contaminated more than 870 km2 of land, home to about 70,000 people who were not evacuated. These people were exposed to harmful radioisotopes and now have an increased risk to develop cancer or other radiation-induced diseases. Many people still live in areas with high contamination. Food, milk and drinking water have been contaminated as well, leading to internal radiation exposure. Most severely affected are children, as their bodies are more susceptible to radiation damage. Preliminary tests have shown internal radioactive contamination of children with iodine-131 and caesium-137. It is too early to estimate the extent of health effects caused by the nuclear disaster. Taking into consideration the studies on Chernobyl survivors and the findings of the BEIR VII report, scientists will be able to estimate the effects once the true extent of radioactive emissions, fallout and contamination are better studied. Large-scale independent epidemiological studies are needed in order to better help the victims of this catastrophe. Claims by scientists affiliated with the nuclear industry that no health effects are to be expected are unscientific and immoral.

#### It’s the single greatest danger to the environment

Stapleton 9 - Richard M Stapleton Is the author of books such as Lead Is a Silent Hazard, writes for pollution issues (“Disasters: Nuclear Accidents” <http://www.pollutionissues.com/Co-Ea/Disasters-Nuclear-Accidents.html>) LADI

Of all the environmental disaster events that humans are capable of causing, nuclear disasters have the greatest damage potential. The radiation release associated with a nuclear disaster poses significant acute and chronic risks in the immediate environs and chronic risk over a wide geographic area. Radioactive contamination, which typically becomes airborne, is long-lived, with half-lives guaranteeing contamination for hundreds of years. Concerns over potential nuclear disasters center on nuclear reactors, typically those used to generate electric power. Other concerns involve the transport of nuclear waste and the temporary storage of spent radioactive fuel at nuclear power plants. The fear that terrorists would target a radiation source or create a "dirty bomb" capable of dispersing radiation over a populated area was added to these concerns following the 2001 terrorist attacks on New York City and Washington, D.C. Radioactive emissions of particular concern include strontium-90 and cesium-137, both having thirty-year-plus half-lives, and iodine-131, having a short half-life of eight days but known to cause thyroid cancer. In addition to being highly radioactive, cesium-137 is mistaken for potassium by living organisms. This means that it is passed on up the food chain and bioaccumulated by that process. Strontium-90 mimics the properties of calcium and is deposited in bones where it may either cause cancer or damage bone marrow cells.

#### Biodiversity loss risks mass death of human and animal life - ecosystems aren’t resilient or redundant

Vule 13-School of Biological Sciences, Louisiana Tech University (Jeffrey V. Yule \*, Robert J. Fournier and Patrick L. Hindmarsh, “Biodiversity, Extinction, and Humanity’s Future: The Ecological and Evolutionary Consequences of Human Population and Resource Use”, 2 April 2013, manities 2013, 2, 147–159) LADI

Ecologists recognize that the particulars of the relationship between biodiversity and community resilience in the face of disturbance (a broad range of phenomena including anything from drought, fire, and volcanic eruption to species introductions or removals) depend on context [16,17]. Sometimes disturbed communities return relatively readily to pre-disturbance conditions; sometimes they do not. However, accepting as a general truism that biodiversity is an ecological stabilizer is sensible— roughly equivalent to viewing seatbelt use as a good idea: although seatbelts increase the risk of injury in a small minority of car accidents, their use overwhelmingly reduces risk. As humans continue to modify natural environments, we may be reducing their ability to return to pre-disturbance conditions. The concern is not merely academic. Communities provide the ecosystem services on which both human and nonhuman life depends, including the cycling of carbon dioxide and oxygen by photosynthetic organisms, nitrogen fixation and the filtration of water by microbes, and pollination by insects. If disturbances alter communities to the extent that they can no longer provide these crucial services, extinctions (including, possibly, our own) become more likely. In ecology as in science in general, absolutes are rare. Science deals mainly in probabilities, in large part because it attempts to address the universe’s abundant uncertainties. Species-rich, diverse communities characterized by large numbers of multi-species interactions are not immune to being pushed from one relatively stable state characterized by particular species and interactions to other, quite different states in which formerly abundant species are entirely or nearly entirely absent. Nonetheless, in speciose communities, the removal of any single species is less likely to result in radical change. That said, there are no guarantees that the removal of even a single species from a biodiverse community will not have significant, completely unforeseen consequences. Indirect interactions can be unexpectedly important to community structure and, historically, have been difficult to observe until some form of disturbance (especially the introduction or elimination of a species) occurs. Experiments have revealed how the presence of predators can increase the diversity of prey species in communities, as when predators of a superior competitor among prey species will allow inferior competing prey species to persist [18]. Predators can have even more dramatic effects on communities. The presence or absence of sea otters determines whether inshore areas are characterized by diverse kelp forest communities or an alternative stable state of species poor urchin barrens [19]. In the latter case, the absence of otters leaves urchin populations unchecked to overgraze kelp forests, eliminating a habitat feature that supports a wide range of species across a variety of age classes. Aldo Leopold observed that when trying to determine how a device works by tinkering with it, the first rule of doing the job intelligently is to save all the parts [20]. The extinctions that humans have caused certainly represent a significant problem, but there is an additional difficulty with human investigations of and impacts on ecological and evolutionary processes. Often, our tinkering is unintentional and, as a result, recklessly ignores the necessity of caution. Following the logic inherited from Newtonian physics, humans expect single actions to have single effects. Desiring more game species, for instance, humans typically hunt predators (in North America, for instance, extirpating wolves so as to be able to have more deer or elk for themselves). Yet removing or adding predators has far reaching effects. Wolf removal has led to prey overpopulation, plant over browsing, and erosion [21]. After wolves were removed from Yellowstone National Park, the K of elk increased. This allowed for a shift in elk feeding patterns that left fewer trees alongside rivers, thus leaving less food for beaver and, consequently, fewer beaver dams and less wetland [22,23]. Such a situation represents, in microcosm, the inherent risk of allowing for the erosion of species diversity. In addition to providing habitat for a wide variety of species, wetlands serve as natural water purification systems. Although the Yellowstone region might not need that particular ecosystem service as much as other parts of the world, freshwater resources and wetlands are threatened globally, and the same logic of reduced biodiversity equating to reduced ecosystem services applies. Humans take actions without considering that when tugging on single threads, they unavoidably affect adjacent areas of the tapestry. While human population and per capita resource use remain high, so does the probability of ongoing biodiversity loss. At the very least, in the future people will have an even more skewed perspective than we do about what constitutes a diverse community. In that regard, future generations will be even more ignorant than we are. Of course, we also experience that shifting baseline perspective on biodiversity and population sizes, failing to recognize how much is missing from the world because we are unaware of what past generations saw [11]. But the consequences of diminished biodiversity might be more profound for humans than that. If the disturbance of communities and ecosystems results in species losses that reduce the availability of ecosystem services, human K and, sooner or later, human N will be reduced.

#### Try or die— our efforts to improve tech aren’t working, only a shift away from nuclearsolves

Byrne et al 09 - John Byrne - Distinguished Professor of Energy Climate Policy at the University of Delaware, Cecilia Martinez - research professor at the Center for Energy and Environmental Policy, University of Delaware, Colin Ruggero - PhD Candidate at the New School for Social Research, teaching Sociology at the Community College of Philadelphia: (“Relocating Energy in the Social Commons Ideas for a Sustainable Energy Utility”, Sagepub Journals, Available at http://bst.sagepub.com/content/29/2/81.full.pdf+html, Accessed 8/13/16)IG

Shedding the institutions that created the prospect of climate change will not happen on the watch of the green titans or extra large nuclear power. The modern cornucopian political economy fueled by abundant, carbon-free energy machines will, in fact, risk the possibility of climate change continually because of the core properties of the modern institutional design. Although the abundant energy machine originated and matured in the United States and industrial Europe, the logic of unending growth built into the modern model has promoted its global spread. Today, both extra-large nuclear power and industrial-scale renewables are at the forefront of the trillion dollar clean energy technology development and transfer process envisioned for the globe (International Energy Agency, 2006). Nuclear energy is seen as offering unlimited potential for rapid development in India and China, while large-scale renewables seamlessly fit into existing international financial aid schemes. A burgeoning renewables industry boasts economic opportunities in standardization and certification for delivering green titans to developing countries. If institutional change is to occur, if energy-society relations are to be transformed, and if the threat of global warming is to be earnestly addressed, we will have to design and experiment with alternatives other than these. Given the global character of the challenge, cookie cutter counter-strategies are certain to fail. Often, outside the box alternatives may not be sensible in the modern context. Like a paradigm shift, we need ideas, and actions guided by them, which fail in one context (here, specifically, the context of energy obesity) in order hopefully to support the appearance of a new context. The concept and practice of a sustainable energy utility is offered in this spirit.11 The sustainable energy utility (SEU) involves the creation of an institution with the explicit purpose of enabling communities to reduce and eventually eliminate use of obese energy resources and reliance on obese energy organizations. It is formed as a nonprofit organization to support commons energy development and management. Unlike its for-profit contemporaries, it has no financial or other interest in commodification of energy, ecological, or social relations; its success lies wholly in the creation of shared benefits and responsibilities. The SEU is not a panacea nor is it a blueprint for fixing our energy-carbon problems. It is a strategy to change energy-ecology-society relations. It may not work, but we believe it is worth the effort to invent and pursue the possibility. There should be little doubt about the difficulty of the task. Regimes develop through the interplay of technology and society over time, rather than through prescribed programs. They alter history and then seek to prevent its change, except in ways that bolster regime power. Of specific importance here, obese utilities will not simply cede political and economic success to an antithetical institution—the SEU. That is why change is so hard to realize. Shifting a society towards a new energy regime requires diverse actors working in tandem, across all areas of regime influence. Economic models, political will, social norm development, all these things must be shifted, rather than pulled, from the current paradigm. The SEU constructs energy–ecology-society relations as phenomena of a commons governance regime. It explicitly reframes the preeminent obese energy regime organization—the energy utility—in the antithetical context of using less energy. And, when energy use is needed, it relies on renewable sources available to and therefore governable by the community of users (rather than the titan technology approach of governance by producers). In contrast to the cornucopian strategy of expanding inputs in an effort to endlessly feed the obese regime, the SEU focuses on techniques and social arrangements which can serve the aims of sustainability and equity. It combines political and economic change for the purpose of building a postmodern energy commons; that is, a form of political economy that relies on commons, rather than commodity, relations for its evolution. Specifically, it uses the ideas of a commonwealth economy and a community trust to achieve the goal of postmodern energy sustainability. The meanings of commonwealth, community trust, and commons, relevant to a SEU, are explored below.

#### BioD key to the poverty and the economy

PLTA 14 [(Pennsylvania Land Trust Association) “Economic Benefits of Biodiversity” Conservationtools.org Feb 24] AT

Biodiversity Underpins Economic Activity Agriculture, forestry and fisheries products, stable natural hydrological cycles, fertile soils, a balanced climate and numerous other vital ecosystem services depend upon the conservation of biological diversity. Food production relies on biodiversity for a variety of food plants, pollination, pest control, nutrient provision, genetic diversity, and disease prevention and control. Both medicinal plants and manufactured pharmaceuticals rely on biodiversity. Decreased biodiversity can lead to increased transmission of diseases to humans and increased healthcare costs. The outdoor tourism industry relies on biodiversity to create and maintain that which tourists come to see, as does the multi-billion dollar fishing and hunting industry. Related Benefits While this guide focuses on economic benefits, it is not meant to diminish the importance of the environmental and social benefits of biodiversity. Related guides at ConservationTools.org include: Economic Benefits of Land Conservation Economic Benefits of Parks Economic Benefits of Trails Economic Benefits of Smart Growth and Costs of Sprawl Organization of This Guide This guide presents an inventory of studies. The heading of each section is the title of the study and is hyperlinked to the ConservationTools.org library listing where the study can be viewed or downloaded. The organization responsible for the study is given, followed by a summary of the key economic findings of the study. Economic Impact Studies Economic and Environmental Benefits of Biodiversity BioScience Maintaining biodiversity is essential for organic waste disposal, soil formation, biological nitrogen fixation, crop and livestock genetics, biological pest control, plant pollination, and pharmaceuticals. Plants and microbes help to degrade chemical pollutants and organic wastes and cycle nutrients through the ecosystem. For example: Pollinators, including bees and butterflies, provide significant environmental and economic benefits to agricultural and natural ecosystems, including adding diversity and productivity to food crops. As many as one-third of the world’s food production relies directly or indirectly on insect pollination. About 130 of the crops gown in the United States are insect pollinated. Habitat fragmentation and loss adversely affects pollinator food sources, nesting sites, and mating sites, causing precipitous declines in the populations of wild pollinators. There are 6 million tons of food products harvested annually from terrestrial wild biota in the United States including large and small animals, maple syrup, nuts, blueberries and algae. The 6 billion tons of food are valued at $57 million and add $3 billion to the country’s economy (1995 calculations). Approximately 75% (by weight) of the 100,000 chemicals released into the environment can be degraded by biological organisms and are potential targets of both bioremediation and biotreatment. The savings gained by using bioremediation instead of the other available techniques; physical, chemical and thermal; to remediate chemical pollution worldwide give an annual benefit of $135 billion (1997 calculation). Maintaining biodiversity in soils and water is imperative to the continued and improved effectiveness of bioremediation and biotreatment. Biodiversity is essential for the sustainable functioning of the agricultural, forest, and natural ecosystems on which humans depend, but human activities, especially the development of natural lands, are causing a species extinction rate of 1,000 to 10,000 times the natural rate. The authors estimate that in the United States, biodiversity provides a total of $319 billion dollars in annual benefits and $2,928 billion in annual benefits worldwide (1997 calculation) Linking Biodiversity Conservation and Poverty Alleviation: A State of Knowledge Review Convention on Biological Diversity Biodiversity conservation and poverty reduction are two global challenges that are inextricably linked. But biodiversity is generally a public good, so it is under-valued, or not valued at all, in national economies. This paper focuses on the question “which groups of the (differentiated) poor depend, in which types of ways, on different elements of biological diversity?” It focuses on biodiversity as a means of subsistence and income to the poor and biodiversity as insurance to prevent the poor from falling even deeper into poverty. Ten conservation mechanisms that can reduce poverty in the rural poor are identified: non-timber forest products, community timber enterprises, payments for environmental services, nature-based tourism, fish spillover, mangrove restoration, protected area jobs, agroforestry, grasslands management, and agrobiodiversity conservation. There are caveats to these links. The poor depend disproportionately on biodiversity for their subsistence needs and biodiversity conservation can be a route out of poverty under some circumstances. However, it is often the relatively low value or inferior goods that are most significant to the poor, and the more affluent’s pursuit of the higher commercial value often crowds out the poor. The scale of poverty reduction may be small; conservation interventions do not necessarily lend themselves to poverty interventions. A focus on the cash benefits of biodiversity conservation is too limited; it excludes the ability to meet basic human needs. And biomass may matter more in the short term, biodiversity (as the foundation for biomass) more in the long term. Conserving Biological Diversity in Agricultural/Forestry Systems Bioscience Both high agricultural productivity and human health depend on the activity of a diverse natural biota. Efforts to curb the loss of biodiversity have intensified in recent years, but they have not kept pace with the growing encroachment of human activities. An estimated $20 billion year is spent worldwide on pesticides. Yet, parasites and predators existing in natural ecosystems provide an estimated 5-10 times this amount of the pest control. Without the existence of natural enemies, crop losses by pests in agriculture and forestry would be catastrophic and costs of chemical pest controls would escalate enormously. A diverse group of microbes fix nitrogen from the atmosphere for use by crops and forests. An estimated $7 billion of nitrogen is supplied to US agriculture each year by nitrogen-fixing microbes and 90 million tons a year for use by agriculture worldwide with a value of almost $50 billion.

### 1AC – Prolif

#### Nuclear Power multiplies the risk for nuclear proliferation and nuclear terror – safeguards are uncertain and nuclear power weakens them

Miller and Sagan 9 - Steven E. Miller, Director, International Security Program; Editor-in-Chief, International Security; Co-Principal Investigator, Project on Managing the Atom, Scott Sagan, Former Research Fellow, International Security Program, 1981-1982; Editorial Board Member, Quarterly Journal: International Security ("Nuclear Power Without Nuclear Proliferation?" Journal Article, Daedalus, volume 138, issue 4, pages 7-18, <http://belfercenter.hks.harvard.edu/publication/19850/nuclear_power_without_nuclear_proliferation.html>) LADI

Today, the Cold War has disappeared but thousands of those weapons have not. In a strange turn of history, the threat of global nuclear war has gone down, but the risk of a nuclear attack has gone up. More nations have acquired these weapons. Testing has continued. Black market trade in nuclear secrets and nuclear materials abound. The technology to build a bomb has spread. Terrorists are determined to buy, build or steal one. Our efforts to contain these dangers are centered on a global non-proliferation regime, but as more people and nations break the rules, we could reach the point where the center cannot hold.

—President Barack Obama Prague, April 5, 2009

The global nuclear order is changing. Concerns about climate change, the volatility of oil prices, and the security of energy supplies have contributed to a widespread and still-growing interest in the future use of nuclear power. Thirty states operate one or more nuclear power plants today, and according to the International Atomic Energy Agency (IAEA), some 50 others have requested technical assistance from the agency to explore the possibility of developing their own nuclear energy programs. It is certainly not possible to predict precisely how fast and how extensively the expansion of nuclear power will occur. But it does seem probable that in the future there will be more nuclear technology spread across more states than ever before. It will be a different world than the one that has existed in the past.

This surge of interest in nuclear energy — labeled by some proponents as "the renaissance in nuclear power" — is, moreover, occurring simultaneously with mounting concern about the health of the nuclear nonproliferation regime, the regulatory framework that constrains and governs the world's civil and military-related nuclear affairs. The Nuclear Non-Proliferation Treaty (NPT) and related institutions have been taxed by new worries, such as the growth in global terrorism, and have been painfully tested by protracted crises involving nuclear weapons proliferation in North Korea and potentially in Iran. (Indeed, some observers suspect that growing interest in nuclear power in some countries, especially in the Middle East, is not unrelated to Iran's uranium enrichment program and Tehran's movement closer to a nuclear weapons capability.) Confidence in the NPT regime seems to be eroding even as interest in nuclear power is expanding.

This realization raises crucial questions for the future of global security. Will the growth of nuclear power lead to increased risks of nuclear weapons proliferation and nuclear terrorism? Will the nonproliferation regime be adequate to ensure safety and security in a world more widely and heavily invested in nuclear power? The authors in this two-volume (Fall 2009 and Winter 2010) special issue of Dædalus have one simple and clear answer to these questions: It depends.

On what will it depend? Unfortunately, the answer to that question is not so simple and clear, for the technical, economic, and political factors that will determine whether future generations will have more nuclear power without more nuclear proliferation are both exceedingly complex and interrelated. How rapidly and in which countries will new nuclear power plants be built? Will the future expansion of nuclear energy take place primarily in existing nuclear power states or will there be many new entrants to the field? Which countries will possess the facilities for enriching uranium or reprocessing plutonium, technical capabilities that could be used to produce either nuclear fuel for reactors or the materials for nuclear bombs? How can physical protection of nuclear materials from terrorist organizations best be ensured? How can new entrants into nuclear power generation best maintain safety to prevent accidents? The answers to these questions will be critical determinants of the technological dimension of our nuclear future.

The major political factors influencing the future of nuclear weapons are no less complex and no less important. Will Iran acquire nuclear weapons; will North Korea develop more weapons or disarm in the coming decade; how will neighboring states respond? Will the United States and Russia take significant steps toward nuclear disarmament, and if so, will the other nuclear-weapons states follow suit or stand on the sidelines?

The nuclear future will be strongly influenced, too, by the success or failure of efforts to strengthen the international organizations and the set of agreements that comprise the system developed over time to manage global nuclear affairs. Will new international or regional mechanisms be developed to control the front-end (the production of nuclear reactor fuel) and the back-end (the management of spent fuel containing plutonium) of the nuclear fuel cycle? What political agreements and disagreements are likely to emerge between the nuclear-weapons states (NWS) and the non-nuclear-weapons states (NNWS) at the 2010 NPT Review Conference and beyond? What role will crucial actors among the NNWS — Japan, Iran, Brazil, and Egypt, for example — play in determining the global nuclear future? And most broadly, will the nonproliferation regime be supported and strengthened or will it be questioned and weakened? As IAEA Director General Mohamed ElBaradei has emphasized, "The nonproliferation regime is, in many ways, at a critical juncture," and there is a need for a new "overarching multilateral nuclear framework."1 But there is no guarantee that such a framework will emerge, and there is wide doubt that the arrangements of the past will be adequate to manage our nuclear future effectively.

#### Risk of nuclear terrorism is real and high now – largest threat of violence conflict

Bunn et al 14 [Matthew, Professor of Practice at the Harvard Kennedy School, with Martin Malin, Executive Director of the Project on Managing the Atom at the Belfer Center for Science and International Affairs at Harvard’s Kennedy School of Government, Nickolas Roth, Research Associate at the Project on Managing the Atom, and William Tobey, Senior Fellow at the Belfer Center for Science and International Affairs, March, “Advancing Nuclear Security: Evaluating Progress and Setting New Goals,” *The Project on Managing the Atom*, pg. 5-9/AKG]

Unfortunately, nuclear and radiological terrorism remain real and dangerous threats.1 The conclusion the assembled leaders reached at the Washington Nuclear Security Summit and reaffirmed in Seoul remains correct: “Nuclear terrorism continues to be one of the most challenging threats to international security. Defeating this threat requires strong national measures and international cooperation given its potential global political, economic, social, and psychological consequences.”2 There are three types of nuclear or radiological terrorist attack: • Nuclear weapons. Terrorists might be able to get and detonate an assembled nuclear weapon made by a state, or make a crude nuclear bomb from stolen separated plutonium or HEU. This would be the most difficult type of nuclear terrorism for terrorists to accomplish—but the devastation could be absolutely horrifying, with political and economic aftershocks reverberating around the world. • “Dirty bombs.” A far simpler approach would be for terrorists to obtain radiological materials—available in hospitals, industrial sites, and more—and disperse them to contaminate an area with radioactivity, using explosives or any number of other means. In most scenarios of such attacks, few people would die from the radiation—but the attack could spread fear, force the evacuation of many blocks of a major city, and inflict billions of dollars in costs of cleanup and economic disruption. While a dirty bomb attack would be much easier for terrorists to carry out than an attack using a nuclear explosive, the consequences would be far less—an expensive and disruptive mess, but not the heart of a major city going up in smoke. • Nuclear sabotage. Terrorists could potentially cause a Fukushima-like meltdown at a nuclear reactor or sabotage a spent fuel pool or high-level waste store. An unsuccessful sabotage would have little effect, but a successful one could spread radioactive material over a huge area. Both the scale of the consequences and the difficulty of carrying out a successful attack would be intermediate between nuclear weapons and dirty bombs. Overall, while actual terrorist use of a nuclear weapon may be the least likely of these dangers, its consequences would be so overwhelming that we believe it poses the most significant risk. A similar judgment drove the decision to focus the four-year effort on securing nuclear weapons and the materials needed to make them. Most of this report will focus on the threat of terrorist use of nuclear explosives, but the overall global governance framework for nuclear security is relevant to all of these dangers. The danger of nuclear terrorism is driven by three key factors—terrorist intent to escalate to the nuclear level of violence; potential terrorist capability to do so; and the vulnerability of nuclear weapons and the materials needed to enable terrorists to carry out such an attack—the motive, means, and opportunity of a monstrous crime. Terrorist intent. While most terrorist groups are still focused on small-scale violence for local political purposes, we now live in an age that includes some groups intent on inflicting large-scale destruction to achieve their objectives. Over the past quarter century, both al Qaeda and the Japanese terror cult Aum Shinrikyo seriously sought nuclear weapons and the nuclear materials and expertise needed to make them. Al Qaeda had a focused program reporting directly to Ayman al-Zawahiri (now head of the group), which progressed as far as carrying out crude but sensible conventional explosive tests for the nuclear program in the desert of Afghanistan. There is some evidence that North Caucusus terrorists also sought nuclear weapons—including incidents in which terrorist teams were caught carrying out reconnaissance on Russian nuclear weapon storage sites, whose locations are secret.3 Despite the death of Osama bin Laden and the severe disruption of the core of al Qaeda, there are no grounds for complacency. There is every reason to believe Zawahiri remains eager to inflict destruction on a nuclear scale. Indeed, despite the large number of al Qaeda leaders who have been killed or captured, nearly all of the key players in al Qaeda’s nuclear program remain alive and at large—including Abdel Aziz al-Masri, an Egyptian explosives expert who was al Qaeda’s “nuclear CEO.” In 2003, when al Qaeda operatives were negotiating to buy three of what they thought were nuclear weapons, senior al Qaeda officials told them to go ahead and make the purchase if a Pakistani expert with equipment confirmed the items were genuine. The US government has never managed to determine who the Pakistani nuclear weapons expert was in whom al Qaeda had such confidence—and what he may have been doing in the intervening decade. More fundamentally, with at least two, and probably three, groups having gone down this path in the past 25 years, there is no reason to expect they will be the last. The danger of nuclear terrorism will remain as long as nuclear weapons, the materials needed to make them, and terrorist groups bent on large-scale destruction co-exist. Potential terrorist capabilities. No one knows what capabilities a secret cell of al Qaeda may have managed to retain or build. Unfortunately, it does not take a Manhattan Project to make a nuclear bomb—indeed, over 90 percent of the Manhattan Project effort was focused on making the nuclear materials, not on designing and building the weapons. Numerous studies by the United States and other governments have concluded that it is plausible that a sophisticated terrorist group could make a crude nuclear bomb if it got enough separated plutonium or HEU.4 A “gun-type” bomb, such as the weapon that obliterated Hiroshima, fundamentally involves slamming two pieces of HEU together at high speed. An “implosion-type” bomb, which is needed to get a sub-stantial explosive yield from plutonium, requires crushing nuclear material to a higher density—a more complex task, but still plausible for terrorists, especially if they got knowledgeable help. Many analysts argue that, since states spend billions of dollars and assign hundreds or thousands of people to building nuclear weapons, it is totally implausible that terrorists could carry out this task. Unfortunately, this argument is wrong, for two reasons. First, as the Manhattan Project statistic suggests, the difficult part of making a nuclear bomb is making the nuclear material. That is what states spend billions seeking to accomplish. Terrorists are highly unlikely to ever be able to make their own bomb material—but if they could get stolen material, that step would be bypassed. Second, it is far easier to make a crude, unsafe, unreliable bomb of uncertain yield, which might be delivered in the back of a truck, than to make the kind of nuclear weapon a state would want in its arsenal—a safe, reliable weapon of known yield that can be delivered by missile or combat aircraft. It is highly unlikely terrorists will ever be able to build that kind of nuclear weapon. Remaining vulnerabilities. While many countries have done a great deal to strengthen nuclear security, serious vulnerabilities remain. Around the world, there are stocks of nuclear weapons or materials whose security systems are not sufficient to protect against the full range of plausible outsider and insider threats they may face. As incidents like the intrusion at Y-12 in the United States in 2012 make clear, many nuclear facilities and transporters still grapple with serious problems of security culture. It is fair to say that every country where nuclear weapons, weapons-usable nuclear materials, major nuclear facilities, or dangerous radiological sources exist has more to do to ensure that these items are sustainably secured and accounted for. At least three lines of evidence confirm that important nuclear security weaknesses continue to exist. First, seizures of stolen HEU and separated plutonium continue to occur, including, mostly recently HEU seizures in 2003, 2006, 2010, and 2011.5 These seizures may result from material stolen long ago, but, at a minimum, they make clear that stocks of HEU and plutonium remain outside of regulatory control. Second, in cases where countries do realistic tests to probe whether security systems can protect against teams of clever adversaries determined to find a weak point, the adversaries sometimes succeed—even when their capabilities are within the set of threats the security system is designed to protect against. This happens with some regularity in the United States (though less often than before the 9/11 attacks); if more countries carried out comparable performance tests, one would likely see similar results. Third, in real non-nuclear thefts and terrorist attacks around the world, adversaries sometimes demonstrate capabilities and tactics well beyond what many nuclear security systems would likely be able to handle (see the discussion of the recent Västberga incident in Sweden). Of course, the initial theft of nuclear material would be only the first step. Adversaries would have to smuggle the material to wherever they wanted to make their bomb, and ultimately to the target. A variety of measures have been put in place in recent years to try to stop nuclear smuggling, from radiation detectors to national teams trained and equipped to deal with nuclear smuggling cases—and more should certainly be done. But once nuclear material has left the facility where it is supposed to be, it could be anywhere, and finding and recovering it poses an enormous challenge. The immense length of national borders, the huge scale of legitimate traffic, the myriad potential pathways across these borders, and the small size and weak radiation signal of the materials needed to make a nuclear bomb make nuclear smuggling extraordinarily difficult to stop. There is also the danger that a state such as North Korea might consciously decide to provide nuclear weapons or the materials needed to make them to terrorists. This possibility cannot be ruled out, but there is strong reason to believe that such conscious state decisions to provide these capabilities are a small part of the overall risk of nuclear terrorism. Dictators determined to maintain their power are highly unlikely to hand over the greatest weapon they have to terrorist groups they cannot control, who might well use it in ways that would provoke retaliation that would remove the dictator from power forever. Although nuclear forensics is by no means perfect, it would be only one of many lines of evidence that could potentially point back to the state that provided the materials; no state could ever be confident they could make such a transfer withoutbeing caught.6 And terrorists are unlikely to have enough money to make a substantial difference in either the odds of regime survival or the wealth of a regime’s elites, even in North Korea, one of the poorest countries on earth. On the other hand, serious risks would arise in North Korea, or other nuclear-armed states, in the event of state collapse—and as North Korea’s stockpile grows, one could imagine a general managing some of that stockpile concluding he could sell a piece of it and provide a golden parachute for himself and his family without getting caught. No one knows the real likelihood of nuclear terrorism. But the consequences of a terrorist nuclear blast would be so catastrophic that even a small chance is enough to justify urgent action to reduce the risk. The heart of a major city could be reduced to a smoldering radioactive ruin, leaving tens to hundreds of thousands of people dead. The perpetrators or others might claim to have more weapons already hidden in other major cities and threaten to set them off if their demands were not met—potentially provoking uncontrolled evacuation of many urban centers. Devastating economic consequences would reverberate worldwide. Kofi Annan, while serving as Secretary-General of the United Nations, warned that the global economic effects of a nuclear terrorist attack in a major city would push “tens of millions of people into dire poverty,” creating a “second death toll throughout the developing world.”7

#### War is the root cause of structural violence

**Goldstein 2001** – IR professor at American University (Joshua, War and Gender, p. 412, Google Books)

First, peace activists face a dilemma in thinking about causes of war and working for peace. Many peace scholars and activists support the approach, “if you want peace, work for justice.” Then, if one believes that sexism contributes to war, one can work for gender justice specifically (perhaps. among others) in order to pursue peace. This approach brings strategic allies to the peace movement (women, labor, minorities), but rests on the assumption that injustices cause war. The evidence in this book suggests that causality runs at least as strongly the other way. War is not a product of capitalism, imperialism, gender, innate aggression, or any other single cause, although all of these influence wars’ outbreaks and outcomes. Rather, war has in part fueled and sustained these and other injustices.9 So, “if you want peace, work for peace.” Indeed, if you want justice (gender and others), work for peace. Causality does not run just upward through the levels of analysis, from types of individuals, societies, and governments up to war. It runs downward too. Enloe suggests that changes in attitudes towards war and the military may be the most important way to “reverse women’s oppression.” The dilemma is that peace work focused on justice brings to the peace movement energy, allies, and moral grounding, yet, in light of this book’s evidence, the emphasis on injustice as the main cause of war seems to be empirically inadequate.

#### It overwhelms barriers for expertise

Ackland 9 - Len Ackland, co-director of the Center for Environmental Journalism., (“Weapons proliferation a big risk with nuclear power” February 10, 2009, <http://www.cejournal.net/?p=903>) LADI

As Tom Yulsman points out in his Feb. 5 posting, the tight connection between nuclear power and nuclear weapons is seriously underplayed and often ignored in discussions about the so-called “need” for nuclear power to help meet energy demand while addressing global warming concerns. (Issues including accidents, terrorism, high-level nuclear waste disposal and economic costs are also important, but I won’t deal with them in this brief commentary.) While Tom mentions the concern over plutonium, which I’ll return to momentarily in responding to the questions from the commenter on the Feb. 5 post, remember that the convergence between nuclear power and weapons occurs at two points in the nuclear “fuel cycle” — the cradle-to-grave process beginning with uranium mining and ending with nuclear waste or incredible explosions. The first power-weapons crossover comes during uranium “enrichment,” after uranium ore is milled to extract uranium in the form called “yellow cake” that is then converted to uranium hexafluoride gas. Enrichment of the gas means increasing the amount of the fissile uranium-235 isotope, which comprises 0.7 percent of natural uranium, to the 3-6 percent needed to make fuel rods for commercial nuclear reactors. The same centrifuges (the modern technology of choice) that separate the U-235 from the U-238 can be kept running until the percentage of U-235 reaches about 90 percent and can be used for the kind of nuclear bomb that destroyed Hiroshima. Enrichment — low for nuclear power plants and high for bombs — is at the heart of the current controversy over Iran’s plans and capabilities. The second power-weapons crossover comes when low-enriched uranium fuel is burned in nuclear reactors, whether military, civilian, or dual use. Neutrons produced in the chain reaction are captured by the U-238 to form U-239 then neptunium-239 which decays into plutonium-239, the key fissile isotope for nuclear weapons. Other plutonium isotopes, such as Pu-240, Pu-241, and Pu-242 are also produced. The extent to which the uranium fuel elements are irradiated is called “fuel burnup.” Basically, military reactors designed specifically to produce Pu-239 burn the fuel for shorter periods, a few weeks, before the fuel rods are removed from the reactors in order to minimize the buildup of Pu-240 and other elements. Commercial reactors, aimed at maximizing the energy output in order to produce electricity, burn the fuel for a year or so before the fuel rod assemblies are changed out. The used or “spent” fuel contains higher percentages of the undesirable (for bomb builders) plutonium isotopes. Dual-use reactors, such as the one that caused the Chernobyl accident in 1986, tend toward the shorter fuel burnup times. The plutonium in the spent fuel is the 20,000 kilograms that the Federation of American Scientists estimates is produced each year by the world’s currently operating 438 reactors. Other sources estimate the amount of plutonium in spent fuel as much higher. For a good description of these issues, see David Albright, et. al., “Plutonium and Highly Enriched Uranium 1996: World Inventories, Capabilities and Policies,” SIPRI, Oxford U. Press, 1997. Finally, before the plutonium-239 created in nuclear reactors can be used in weapons, it must first be separated from the uranium, transuranics and other fission products. This is done in “reprocessing” plants and is often benignly referred to as plutonium recycling. Currently there are only a handful of commercial reprocessing facilities, the one in France and the one in the United Kingdom having operated the longest. Much of the plutonium extracted by these plants is mixed with uranium and reused for nuclear fuel in commercial reactors. But reprocessing plants also exist in countries using plutonium for nuclear weapons. Thus, North Korea, the most recent country to join the nine-member nuclear weapons “club,” made weapons through its reprocessing facility. The fact that a country like North Korea could accomplish the manufacture of nuclear weapons should give pause to those who advocate nuclear power plants as an answer to global warming. A plutonium economy and/or the presence of uranium enrichment facilities in many nations around the world are dangerous prospects. Even accepting the arguments that life-cycle analysis of nuclear plants — which takes into account the emissions from mining, construction and so forth — puts them on a par with renewable energy sources in terms of greenhouse gas emissions doesn’t overcome their disadvantages. And the assurance from nuclear advocates that the next generation of plants (Generation IV, still under development) will be more “proliferation resistant,” isn’t comforting given the technologists’ track record. And that still would be a long way from proliferation proof.

## 1AC – Long Prolif

### 1AC – Framework

#### The standard is maximizing expected well-being.

#### Personal Identity is irrelevant, we can separate our brains and become separate streams of thought.

DerekParfit

Derek Parfit, Reasons and Persons (Oxford: Clarendon, 1984).

Some recent medical cases provide striking evidence in favour of the Reductionist View. Human beings have a lower brain and two upper hemispheres, which are connected by a bundle of fibers. In treating a few people with severe epilepsy, surgeons have cut these fibers. The aim was to reduce the severity of epileptic fits, by confining their causes to a single hemisphere. This aim was achieved. But the operations had another unintended consequence. The effect, in the words of one surgeon, was the creation of ‘two separate spheres of consciousness.’ This effect was revealed by various psychological tests. These made use of two facts. We control our right arms with our left hemispheres, and vice versa. And what is in the right halves of our visual fields we see with our left hemispheres, and vice versa. When someone’s hemispheres have been disconnected, psychologists can thus present to this person two different written questions in the two halves of his visual field, and can receive two different answers written by this person’s two hands

#### Given the absence of identity only utilitarianism makes sense

Shoemaker 99

Shoemaker, David (Dept of Philosophy, U Memphis). “Utilitarianism and Personal Identity.” *The Journal of Value Inquiry* 33: 183–199, 1999. <http://www.csun.edu/~ds56723/jvipaper.pdf>

Extreme reductionism might lend support to utilitarianism in the following way. Many people claim that we are justified in maximizing the good in our own lives, but not justified in maximizing the good across sets of lives, simply because each of us is a single, deeply unified person, unified by the further fact of identity, whereas there is no such corresponding unity across sets of lives. But if the only justification for the different treatment of individual lives and sets of lives is the further fact, and this fact is undermined by the truth of reductionism, then nothing justifies this different treatment. There are no deeply unified subjects of experience. What remains are merely the experiences themselves, and so any ethical theory distinguishing between individual lives and sets of lives is mistaken. If the deep, further fact is missing, then there are no unities. The morally significant units should then be the states people are in at particular times, and an ethical theory that focused on them and attempted to improve their quality, whatever their location, would be the most plausible. Utilitarianism is just such a theory

#### Only utilitarianism can serve as the basis to legitimately justify policy to the public. Government actions will inevitably lead to trade-offs between citizens. The only justifiable way to resolve these conflicts is utilitarianism.

Gary Woller [BYU Prof., “An Overview by Gary Woller”, A Forum on the Role of Environmental Ethics, June 1997, pg. 10]

Moreover, virtually all public policies entail some redistribution of economic or political resources, such that one group's gains must come at another group's ex- pense. Consequently, public policies in a democracy must be justified to the public, and especially to those who pay the costs of those policies. Such justification cannot simply be assumed a priori by invoking some higher-order moral principle. Appeals to a priori moral principles, such as environmental preservation, also often fail to acknowledge that public policies inevitably entail trade-offs among competing values. Thus since policymakers cannot justify inherent value conflicts to the public in any philosophical sense, and since public policies inherently imply winners and losers, the policymakers' duty to the public interest requires them to demonstrate that the redistributive effects and value trade-offs implied by their polices are somehow to the overall advantage of society. At the same time, deontologically based ethical systems have severe practical limitations as a basis for public policy. At best, [Also,] apriorimoral principles provide only general guidance to ethical dilemmas in public affairs and do not themselves suggest appropriate public policies, and at worst, they create a regimen of regulatory unreasonableness while failing to adequately address the problem or actually making it worse.For example, a moral obligation to preserve the environment by no means implies the best way, or any way for that matter, to do so, just as there is no a priori reason to believe that any policy that claims to preserve the environment will actually do so. Any number of policies might work, and others, although seemingly consistent with the moral principle, will fail utterly. That deontological principles are an inadequate basis for environmental policy is evident in the rather significant irony that most forms of deontologically based environmental laws and regulations tend to be implemented in a very utilitarian manner by street-level enforcement officials. Moreover, ignoring the relevant costs and benefits of environmental policy and their attendant incentive structures can, as alluded to above, actually work at cross purposes to environmental preservation. (There exists an extensive literature on this aspect of regulatory enforcement and the often perverse outcomes of regulatory policy. See, for example, Ackerman, 1981; Bartrip and Fenn, 1983; Hawkins, 1983, 1984; Hawkins and Thomas, 1984.) Even the most die-hard preservationist/deontologist would, I believe, be troubled by this outcome. The above points are perhaps best expressed by Richard Flathman, The number of values typically involved in public policy decisions, the broad categories which must be employed and above all, the scope and complexity of the consequences to be anticipated militate against reasoning so conclusively that they generate an imperative to institute a specific policy. It is seldom the case that only one policy will meet the criteria of the public interest (1958, p. 12). It therefore follows that in a democracy, policymakers have an ethical duty to establish a plausible link between policy alternatives and the problems they address, and the public must be reasonably assured that a policy will actually do something about an existing problem; this requires the means-end language and methodology of utilitarian ethics. Good intentions, lofty rhetoric, and moral piety are an insufficient though perhaps at times a necessary, basis for public policy in a democracy.

#### If there’s even a risk of ethical uncertainty, we should always prioritize the survival of the human race to ensure future value.

Bostrom [Nick Bostrom. Faculty of Philosophy & Oxford Martin School University of Oxford. “Existential Risk Prevention as Global Priority.” Global Policy (2012)]

These reflections on moral uncertainty suggest an alternative, complementary way of looking at existential risk; they also suggest a new way of thinking about the ideal of sustainability. Let me elaborate.¶ Our present understanding of axiology might well be confused. We may not now know — at least not in concrete detail — what outcomes would count as a big win for humanity; we might not even yet be able to imagine the best ends of our journey. If we are indeed profoundly uncertain about our ultimate aims, then we should recognize that there is a great option value in preserving — and ideally improving — our ability to recognize value and to steer the future accordingly. Ensuring that there will be a future version of humanity with great powers and a propensity to use them wisely is plausibly the best way available to us to increase the probability that the future will contain a lot of value. To do this, we must prevent any existential catastrophe.

### 1AC – Prolif

#### Nuclear Power multiplies the risk for nuclear proliferation and nuclear terror – safeguards are uncertain and nuclear power weakens them

Miller and Sagan 9 - Steven E. Miller, Director, International Security Program; Editor-in-Chief, International Security; Co-Principal Investigator, Project on Managing the Atom, Scott Sagan, Former Research Fellow, International Security Program, 1981-1982; Editorial Board Member, Quarterly Journal: International Security ("Nuclear Power Without Nuclear Proliferation?" Journal Article, Daedalus, volume 138, issue 4, pages 7-18, <http://belfercenter.hks.harvard.edu/publication/19850/nuclear_power_without_nuclear_proliferation.html>) LADI

Today, the Cold War has disappeared but thousands of those weapons have not. In a strange turn of history, the threat of global nuclear war has gone down, but the risk of a nuclear attack has gone up. More nations have acquired these weapons. Testing has continued. Black market trade in nuclear secrets and nuclear materials abound. The technology to build a bomb has spread. Terrorists are determined to buy, build or steal one. Our efforts to contain these dangers are centered on a global non-proliferation regime, but as more people and nations break the rules, we could reach the point where the center cannot hold.

—President Barack Obama Prague, April 5, 2009

The global nuclear order is changing. Concerns about climate change, the volatility of oil prices, and the security of energy supplies have contributed to a widespread and still-growing interest in the future use of nuclear power. Thirty states operate one or more nuclear power plants today, and according to the International Atomic Energy Agency (IAEA), some 50 others have requested technical assistance from the agency to explore the possibility of developing their own nuclear energy programs. It is certainly not possible to predict precisely how fast and how extensively the expansion of nuclear power will occur. But it does seem probable that in the future there will be more nuclear technology spread across more states than ever before. It will be a different world than the one that has existed in the past.

This surge of interest in nuclear energy — labeled by some proponents as "the renaissance in nuclear power" — is, moreover, occurring simultaneously with mounting concern about the health of the nuclear nonproliferation regime, the regulatory framework that constrains and governs the world's civil and military-related nuclear affairs. The Nuclear Non-Proliferation Treaty (NPT) and related institutions have been taxed by new worries, such as the growth in global terrorism, and have been painfully tested by protracted crises involving nuclear weapons proliferation in North Korea and potentially in Iran. (Indeed, some observers suspect that growing interest in nuclear power in some countries, especially in the Middle East, is not unrelated to Iran's uranium enrichment program and Tehran's movement closer to a nuclear weapons capability.) Confidence in the NPT regime seems to be eroding even as interest in nuclear power is expanding.

This realization raises crucial questions for the future of global security. Will the growth of nuclear power lead to increased risks of nuclear weapons proliferation and nuclear terrorism? Will the nonproliferation regime be adequate to ensure safety and security in a world more widely and heavily invested in nuclear power? The authors in this two-volume (Fall 2009 and Winter 2010) special issue of Dædalus have one simple and clear answer to these questions: It depends.

On what will it depend? Unfortunately, the answer to that question is not so simple and clear, for the technical, economic, and political factors that will determine whether future generations will have more nuclear power without more nuclear proliferation are both exceedingly complex and interrelated. How rapidly and in which countries will new nuclear power plants be built? Will the future expansion of nuclear energy take place primarily in existing nuclear power states or will there be many new entrants to the field? Which countries will possess the facilities for enriching uranium or reprocessing plutonium, technical capabilities that could be used to produce either nuclear fuel for reactors or the materials for nuclear bombs? How can physical protection of nuclear materials from terrorist organizations best be ensured? How can new entrants into nuclear power generation best maintain safety to prevent accidents? The answers to these questions will be critical determinants of the technological dimension of our nuclear future.

The major political factors influencing the future of nuclear weapons are no less complex and no less important. Will Iran acquire nuclear weapons; will North Korea develop more weapons or disarm in the coming decade; how will neighboring states respond? Will the United States and Russia take significant steps toward nuclear disarmament, and if so, will the other nuclear-weapons states follow suit or stand on the sidelines?

The nuclear future will be strongly influenced, too, by the success or failure of efforts to strengthen the international organizations and the set of agreements that comprise the system developed over time to manage global nuclear affairs. Will new international or regional mechanisms be developed to control the front-end (the production of nuclear reactor fuel) and the back-end (the management of spent fuel containing plutonium) of the nuclear fuel cycle? What political agreements and disagreements are likely to emerge between the nuclear-weapons states (NWS) and the non-nuclear-weapons states (NNWS) at the 2010 NPT Review Conference and beyond? What role will crucial actors among the NNWS — Japan, Iran, Brazil, and Egypt, for example — play in determining the global nuclear future? And most broadly, will the nonproliferation regime be supported and strengthened or will it be questioned and weakened? As IAEA Director General Mohamed ElBaradei has emphasized, "The nonproliferation regime is, in many ways, at a critical juncture," and there is a need for a new "overarching multilateral nuclear framework."1 But there is no guarantee that such a framework will emerge, and there is wide doubt that the arrangements of the past will be adequate to manage our nuclear future effectively.

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As Tom Yulsman points out in his Feb. 5 posting, the tight connection between nuclear power and nuclear weapons is seriously underplayed and often ignored in discussions about the so-called “need” for nuclear power to help meet energy demand while addressing global warming concerns. (Issues including accidents, terrorism, high-level nuclear waste disposal and economic costs are also important, but I won’t deal with them in this brief commentary.) While Tom mentions the concern over plutonium, which I’ll return to momentarily in responding to the questions from the commenter on the Feb. 5 post, remember that the convergence between nuclear power and weapons occurs at two points in the nuclear “fuel cycle” — the cradle-to-grave process beginning with uranium mining and ending with nuclear waste or incredible explosions. The first power-weapons crossover comes during uranium “enrichment,” after uranium ore is milled to extract uranium in the form called “yellow cake” that is then converted to uranium hexafluoride gas. Enrichment of the gas means increasing the amount of the fissile uranium-235 isotope, which comprises 0.7 percent of natural uranium, to the 3-6 percent needed to make fuel rods for commercial nuclear reactors. The same centrifuges (the modern technology of choice) that separate the U-235 from the U-238 can be kept running until the percentage of U-235 reaches about 90 percent and can be used for the kind of nuclear bomb that destroyed Hiroshima. Enrichment — low for nuclear power plants and high for bombs — is at the heart of the current controversy over Iran’s plans and capabilities. The second power-weapons crossover comes when low-enriched uranium fuel is burned in nuclear reactors, whether military, civilian, or dual use. Neutrons produced in the chain reaction are captured by the U-238 to form U-239 then neptunium-239 which decays into plutonium-239, the key fissile isotope for nuclear weapons. Other plutonium isotopes, such as Pu-240, Pu-241, and Pu-242 are also produced. The extent to which the uranium fuel elements are irradiated is called “fuel burnup.” Basically, military reactors designed specifically to produce Pu-239 burn the fuel for shorter periods, a few weeks, before the fuel rods are removed from the reactors in order to minimize the buildup of Pu-240 and other elements. Commercial reactors, aimed at maximizing the energy output in order to produce electricity, burn the fuel for a year or so before the fuel rod assemblies are changed out. The used or “spent” fuel contains higher percentages of the undesirable (for bomb builders) plutonium isotopes. Dual-use reactors, such as the one that caused the Chernobyl accident in 1986, tend toward the shorter fuel burnup times. The plutonium in the spent fuel is the 20,000 kilograms that the Federation of American Scientists estimates is produced each year by the world’s currently operating 438 reactors. Other sources estimate the amount of plutonium in spent fuel as much higher. For a good description of these issues, see David Albright, et. al., “Plutonium and Highly Enriched Uranium 1996: World Inventories, Capabilities and Policies,” SIPRI, Oxford U. Press, 1997. Finally, before the plutonium-239 created in nuclear reactors can be used in weapons, it must first be separated from the uranium, transuranics and other fission products. This is done in “reprocessing” plants and is often benignly referred to as plutonium recycling. Currently there are only a handful of commercial reprocessing facilities, the one in France and the one in the United Kingdom having operated the longest. Much of the plutonium extracted by these plants is mixed with uranium and reused for nuclear fuel in commercial reactors. But reprocessing plants also exist in countries using plutonium for nuclear weapons. Thus, North Korea, the most recent country to join the nine-member nuclear weapons “club,” made weapons through its reprocessing facility. The fact that a country like North Korea could accomplish the manufacture of nuclear weapons should give pause to those who advocate nuclear power plants as an answer to global warming. A plutonium economy and/or the presence of uranium enrichment facilities in many nations around the world are dangerous prospects. Even accepting the arguments that life-cycle analysis of nuclear plants — which takes into account the emissions from mining, construction and so forth — puts them on a par with renewable energy sources in terms of greenhouse gas emissions doesn’t overcome their disadvantages. And the assurance from nuclear advocates that the next generation of plants (Generation IV, still under development) will be more “proliferation resistant,” isn’t comforting given the technologists’ track record. And that still would be a long way from proliferation proof.

#### Prolif in new states causes nuclear conflict.

Kroenig 14 – Matthew, Associate Professor and International Relations Field Chair at Georgetown University, and Nonresident Senior Fellow in the Brent Scowcroft Center on International Security at The Atlantic Council (“The History of Proliferation Optimism: Does It Have A Future?”, April 2014, http://www.matthewkroenig.com/The%20History%20of%20Proliferation%20Optimism\_Feb2014.pdf)

The spread of nuclear weapons poses a number of severe threats to international peace and security including: nuclear war, nuclear terrorism, global and regional instability, constrained freedom of action, weakened alliances, and further nuclear proliferation. Each of these threats has received extensive treatment elsewhere and this review is not intended to replicate or even necessarily to improve upon these previous efforts. Rather the goals of this section are more modest: to usefully bring together and recap the many reasons why we should be pessimistic about the likely consequences of nuclear proliferation. Many of these threats will be illuminated with a discussion of a case of much contemporary concern: Iran’s advanced nuclear program. Nuclear War. The greatest threat posed by the spread of nuclear weapons is nuclear war. The more states in possession of nuclear weapons, the greater the probability that somewhere, someday, there will be a catastrophic nuclear war. To date, nuclear weapons have only been used in warfare once. In 1945, the United States used nuclear weapons on Hiroshima and Nagasaki, bringing World War II to a close. Many analysts point to the sixty-five-plus-year tradition of nuclear non-use as evidence that nuclear weapons are unusable, but it would be naïve to think that nuclear weapons will never be used again simply because they have not been used for some time. After all, analysts in the 1990s argued that worldwide economic downturns like the great depression were a thing of the past, only to be surprised by the dot-com bubble bursting later in the decade and the Great Recession of the late Naughts.49 This author, for one, would be surprised if nuclear weapons are not used again sometime in his lifetime. Before reaching a state of MAD, new nuclear states go through a transition period in which they lack a secure second-strike capability. In this context, one or both states might believe that it has an incentive to use nuclear weapons first. For example, if Iran acquires nuclear weapons, neither Iran, nor its nuclear-armed rival, Israel, will have a secure, second-strike capability. Even though it is believed to have a large arsenal, given its small size and lack of strategic depth, Israel might not be confident that it could absorb a nuclear strike and respond with a devastating counterstrike. Similarly, Iran might eventually be able to build a large and survivable nuclear arsenal, but, when it first crosses the nuclear threshold, Tehran will have a small and vulnerable nuclear force. In these pre-MAD situations, there are at least three ways that nuclear war could occur. First, the state with the nuclear advantage might believe it has a splendid first strike capability. In a crisis, Israel might, therefore, decide to launch a preventive nuclear strike to disarm Iran’s nuclear capabilities. Indeed, this incentive might be further increased by Israel’s aggressive strategic culture that emphasizes preemptive action. Second, the state with a small and vulnerable nuclear arsenal, in this case Iran, might feel use ‘em or loose ‘em pressures. That is, in a crisis, Iran might decide to strike first rather than risk having its entire nuclear arsenal destroyed. Third, as Thomas Schelling has argued, nuclear war could result due to the reciprocal fear of surprise attack.50 If there are advantages to striking first, one state might start a nuclear war in the belief that war is inevitable and that it would be better to go first than to go second. Fortunately, there is no historic evidence of this dynamic occurring in a nuclear context, but it is still possible. In an Israeli-Iranian crisis, for example, Israel and Iran might both prefer to avoid a nuclear war, but decide to strike first rather than suffer a devastating first attack from an opponent. Even in a world of MAD, however, when both sides have secure, second-strike capabilities, there is still a risk of nuclear war. Rational deterrence theory assumes nuclear-armed states are governed by rational leaders who would not intentionally launch a suicidal nuclear war. This assumption appears to have applied to past and current nuclear powers, but there is no guarantee that it will continue to hold in the future. Iran’s theocratic government, despite its inflammatory rhetoric, has followed a fairly pragmatic foreign policy since 1979, but it contains leaders who hold millenarian religious worldviews and could one day ascend to power. We cannot rule out the possibility that, as nuclear weapons continue to spread, some leader somewhere will choose to launch a nuclear war, knowing full well that it could result in self-destruction. One does not need to resort to irrationality, however, to imagine nuclear war under MAD. Nuclear weapons may deter leaders from intentionally launching full-scale wars, but they do not mean the end of international politics. As was discussed above, nuclear-armed states still have conflicts of interest and leaders still seek to coerce nuclear-armed adversaries. Leaders might, therefore, choose to launch a limited nuclear war.51 This strategy might be especially attractive to states in a position of conventional inferiority that might have an incentive to escalate a crisis quickly. During the Cold War, the United States planned to use nuclear weapons first to stop a Soviet invasion of Western Europe given NATO’s conventional inferiority.52 As Russia’s conventional power has deteriorated since the end of the Cold War, Moscow has come to rely more heavily on nuclear weapons in its military doctrine. Indeed, Russian strategy calls for the use of nuclear weapons early in a conflict (something that most Western strategists would consider to be escalatory) as a way to de-escalate a crisis. Similarly, Pakistan’s military plans for nuclear use in the event of an invasion from conventionally stronger India. And finally, Chinese generals openly talk about the possibility of nuclear use against a U.S. superpower in a possible East Asia contingency. Second, as was also discussed above, leaders can make a “threat that leaves something to chance.”53 They can initiate a nuclear crisis. By playing these risky games of nuclear brinkmanship, states can increases the risk of nuclear war in an attempt to force a less resolved adversary to back down. Historical crises have not resulted in nuclear war, but many of them, including the 1962 Cuban Missile Crisis, have come close. And scholars have documented historical incidents when accidents nearly led to war.54 When we think about future nuclear crisis dyads, such as Iran and Israel, with fewer sources of stability than existed during the Cold War, we can see that there is a real risk that a future crisis could result in a devastating nuclear exchange. Nuclear Terrorism. The spread of nuclear weapons also increases the risk of nuclear terrorism.55 While September 11th was one of the greatest tragedies in American history, it would have been much worse had Osama Bin Laden possessed nuclear weapons. Bin Laden declared it a “religious duty” for Al Qaeda to acquire nuclear weapons and radical clerics have issued fatwas declaring it permissible to use nuclear weapons in Jihad against the West.56 Unlike states, which can be more easily deterred, there is little doubt that if terrorists acquired nuclear weapons, they would use them. Indeed, in recent years, many U.S. politicians and security analysts have argued that nuclear terrorism poses the greatest threat to U.S. national security.57 Analysts have pointed out the tremendous hurdles that terrorists would have to overcome in order to acquire nuclear weapons.58 Nevertheless, as nuclear weapons spread, the possibility that they will eventually fall into terrorist hands increases. States could intentionally transfer nuclear weapons, or the fissile material required to build them, to terrorist groups. There are good reasons why a state might be reluctant to transfer nuclear weapons to terrorists, but, as nuclear weapons spread, the probability that a leader might someday purposely arm a terrorist group increases. Some fear, for example, that Iran, with its close ties to Hamas and Hezbollah, might be at a heightened risk of transferring nuclear weapons to terrorists. Moreover, even if no state would ever intentionally transfer nuclear capabilities to terrorists, a new nuclear state, with underdeveloped security procedures, might be vulnerable to theft, allowing terrorist groups or corrupt or ideologically-motivated insiders to transfer dangerous material to terrorists. There is evidence, for example, that representatives from Pakistan’s atomic energy establishment met with Al Qaeda members to discuss a possible nuclear deal.59 Finally, a nuclear-armed state could collapse, resulting in a breakdown of law and order and a loose nukes problem. U.S. officials are currently very concerned about what would happen to Pakistan’s nuclear weapons if the government were to fall. As nuclear weapons spread, this problem is only further amplified. Iran is a country with a history of revolutions and a government with a tenuous hold on power. The regime change that Washington has long dreamed about in Tehran could actually become a nightmare if a nuclear-armed Iran suffered a break down in authority, forcing us to worry about the fate of Iran’s nuclear arsenal. Regional Instability: The spread of nuclear weapons also emboldens nuclear powers, contributing to regional instability. States that lack nuclear weapons need to fear direct military attack from other states, but states with nuclear weapons can be confident that they can deter an intentional military attack, giving them an incentive to be more aggressive in the conduct of their foreign policy. In this way, nuclear weapons provide a shield under which states can feel free to engage in lower-level aggression. Indeed, international relations theories about the “stability-instability paradox” maintain that stability at the nuclear level contributes to conventional instability.60 Historically, we have seen that the spread of nuclear weapons has emboldened their possessors and contributed to regional instability. Recent scholarly analyses have demonstrated that, after controlling for other relevant factors, nuclear-weapon states are more likely to engage in conflict than nonnuclear-weapon states and that this aggressiveness is more pronounced in new nuclear states that have less experience with nuclear diplomacy.61 Similarly, research on internal decision-making in Pakistan reveals that Pakistani foreign policymakers may have been emboldened by the acquisition of nuclear weapons, which encouraged them to initiate militarized disputes against India.62

#### And, it increases conventional wars.

Kahl 7/9 — associate professor in the Security Studies Program in the Edmund A. Walsh School of Foreign Service at Georgetown University (Colin Kahl, “How worried should U.S. policymakers be about nuclear blackmail?” *Washington Post* 7.09.14) LADI

But here’s the problem from a policy-making perspective: regardless of whether nuclear weapons actually provide nuclear-armed states with greater capabilities and opportunities to engage in effective coercion, new nuclear states appear to believe they do, at least for some period of time, and act accordingly. At least some nuclear-weapons states appear to think a nuclear deterrent shields them from large-scale conventional retaliation from targets of coercion, tempting them to engage in more assertive military behavior below the nuclear threshold, including conventional aggression, low-level violence, proxy attacks, terrorism and the initiation of crises. And this pattern appears to hold even against stronger adversaries that enjoy nuclear superiority. During the Cold War, for example, nuclear deterrence discouraged large-scale conventional or nuclear war, but the superpowers engaged in several direct crises, as well as proxy wars throughout the so-called Third World. Scholars posited that this was the result of a “stability-instability paradox”in which the very “stability” created by mutually assured destruction (MAD) generated greater “instability” by making superpower provocations, disputes and conflict below the nuclear threshold seem “safe.” More recently, nuclear weapons have similarly made the Indian-Pakistani rivalry more crisis-prone even as they discouraged large-scale war or a nuclear exchange. The historical record also strongly suggests that states with “revisionist” aims become more aggressive — both directly and through the use of proxies — after acquiring nuclear weapons, at least for some period of time. Less than six months passed between the August 1949 testing of the first Soviet atomic bomb and Stalin’s green light to North Korean plans to invade South Korea. And, shortly thereafter, Moscow encouraged Ho Chi Minh to intensify his offensive against the French in Indochina. And, as Gavin’s research suggests, the development of thermonuclear weapons in 1955 and intercontinental ballistic missiles in 1958 also appear to have made Khrushchev more assertive, culminating in the 1958-1961 Berlin crisis. Similarly, five years after China became a nuclear power, Mao Zedong authorized Chinese troops to attack Soviet border forces in 1969. Archival evidence also suggests that Iraq’s quest for nuclear weapons was in part driven by Saddam Hussein’s desire to use them as a cover for conventional aggression against Israel. And, more recently, Pakistan’s emboldened support of anti-Indian terrorism and militancy and North Korea’s escalating provocations provide additional illustrations of the possible incentives and opportunities nuclear weapons create to advance a revisionist agenda. Large-n quantitative studies on the emboldening effects of nuclear weapons have produced mixed results. On average, nuclear weapon states appear no more (or less) likely to become involved in international militarized disputes, or to initiate these disputes. But, with regard to interactions between nuclear states, Robert Rauchhaus finds that nuclear status increases the likelihood of low-level militarized disputes, including threats and the limited use of force, even as it reduces the chances of large-scale war. Time and learning may also play a key role. Michael Horowitz finds that the longer a state possesses nuclear weapons, the less likely it is to become involved in disputes. But new nuclear powers appear to be more prone to involvement in militarized disputes in the initial period of time after developing nuclear weapons against all types of states (including nuclear ones). In short, regardless of whether nuclear weapons are objectively useful — or not — in coercion, at least some nuclear states — especially those with revisionist ambitions — seem to believe they are and act accordingly, even toward more nuclear-armed powerful adversaries. And, in many cases, it is precisely this type of adventurism by adversaries that so worries U.S. policymakers. This was my experience observing the Obama administration’s deliberations on the potential dangers of Iranian nuclearization. U.S. officials believe Iranian nuclear acquisition would embolden Tehran — a state with both defensive and ideologically revisionist motivations — to be even more assertive in supporting terrorism, militancy and making coercive threats against its neighbors. They also fear that Iranian nuclearization would spark conventional and nuclear arms racing by other regional powers. Together, these dynamics would make an already volatile Middle East even more difficult to police and manage, requiring costly and complex U.S. deterrence and reassurance strategies and increasing the risk of irregular and conventional war.

#### Risk of nuclear terrorism is real and high now – largest threat of extinction

Bunn et al 14 [Matthew, Professor of Practice at the Harvard Kennedy School, with Martin Malin, Executive Director of the Project on Managing the Atom at the Belfer Center for Science and International Affairs at Harvard’s Kennedy School of Government, Nickolas Roth, Research Associate at the Project on Managing the Atom, and William Tobey, Senior Fellow at the Belfer Center for Science and International Affairs, March, “Advancing Nuclear Security: Evaluating Progress and Setting New Goals,” *The Project on Managing the Atom*, pg. 5-9/AKG]

Unfortunately, nuclear and radiological terrorism remain real and dangerous threats.1 The conclusion the assembled leaders reached at the Washington Nuclear Security Summit and reaffirmed in Seoul remains correct: “Nuclear terrorism continues to be one of the most challenging threats to international security. Defeating this threat requires strong national measures and international cooperation given its potential global political, economic, social, and psychological consequences.”2 There are three types of nuclear or radiological terrorist attack: • Nuclear weapons. Terrorists might be able to get and detonate an assembled nuclear weapon made by a state, or make a crude nuclear bomb from stolen separated plutonium or HEU. This would be the most difficult type of nuclear terrorism for terrorists to accomplish—but the devastation could be absolutely horrifying, with political and economic aftershocks reverberating around the world. • “Dirty bombs.” A far simpler approach would be for terrorists to obtain radiological materials—available in hospitals, industrial sites, and more—and disperse them to contaminate an area with radioactivity, using explosives or any number of other means. In most scenarios of such attacks, few people would die from the radiation—but the attack could spread fear, force the evacuation of many blocks of a major city, and inflict billions of dollars in costs of cleanup and economic disruption. While a dirty bomb attack would be much easier for terrorists to carry out than an attack using a nuclear explosive, the consequences would be far less—an expensive and disruptive mess, but not the heart of a major city going up in smoke. • Nuclear sabotage. Terrorists could potentially cause a Fukushima-like meltdown at a nuclear reactor or sabotage a spent fuel pool or high-level waste store. An unsuccessful sabotage would have little effect, but a successful one could spread radioactive material over a huge area. Both the scale of the consequences and the difficulty of carrying out a successful attack would be intermediate between nuclear weapons and dirty bombs. Overall, while actual terrorist use of a nuclear weapon may be the least likely of these dangers, its consequences would be so overwhelming that we believe it poses the most significant risk. A similar judgment drove the decision to focus the four-year effort on securing nuclear weapons and the materials needed to make them. Most of this report will focus on the threat of terrorist use of nuclear explosives, but the overall global governance framework for nuclear security is relevant to all of these dangers. The danger of nuclear terrorism is driven by three key factors—terrorist intent to escalate to the nuclear level of violence; potential terrorist capability to do so; and the vulnerability of nuclear weapons and the materials needed to enable terrorists to carry out such an attack—the motive, means, and opportunity of a monstrous crime. Terrorist intent. While most terrorist groups are still focused on small-scale violence for local political purposes, we now live in an age that includes some groups intent on inflicting large-scale destruction to achieve their objectives. Over the past quarter century, both al Qaeda and the Japanese terror cult Aum Shinrikyo seriously sought nuclear weapons and the nuclear materials and expertise needed to make them. Al Qaeda had a focused program reporting directly to Ayman al-Zawahiri (now head of the group), which progressed as far as carrying out crude but sensible conventional explosive tests for the nuclear program in the desert of Afghanistan. There is some evidence that North Caucusus terrorists also sought nuclear weapons—including incidents in which terrorist teams were caught carrying out reconnaissance on Russian nuclear weapon storage sites, whose locations are secret.3 Despite the death of Osama bin Laden and the severe disruption of the core of al Qaeda, there are no grounds for complacency. There is every reason to believe Zawahiri remains eager to inflict destruction on a nuclear scale. Indeed, despite the large number of al Qaeda leaders who have been killed or captured, nearly all of the key players in al Qaeda’s nuclear program remain alive and at large—including Abdel Aziz al-Masri, an Egyptian explosives expert who was al Qaeda’s “nuclear CEO.” In 2003, when al Qaeda operatives were negotiating to buy three of what they thought were nuclear weapons, senior al Qaeda officials told them to go ahead and make the purchase if a Pakistani expert with equipment confirmed the items were genuine. The US government has never managed to determine who the Pakistani nuclear weapons expert was in whom al Qaeda had such confidence—and what he may have been doing in the intervening decade. More fundamentally, with at least two, and probably three, groups having gone down this path in the past 25 years, there is no reason to expect they will be the last. The danger of nuclear terrorism will remain as long as nuclear weapons, the materials needed to make them, and terrorist groups bent on large-scale destruction co-exist. Potential terrorist capabilities. No one knows what capabilities a secret cell of al Qaeda may have managed to retain or build. Unfortunately, it does not take a Manhattan Project to make a nuclear bomb—indeed, over 90 percent of the Manhattan Project effort was focused on making the nuclear materials, not on designing and building the weapons. Numerous studies by the United States and other governments have concluded that it is plausible that a sophisticated terrorist group could make a crude nuclear bomb if it got enough separated plutonium or HEU.4 A “gun-type” bomb, such as the weapon that obliterated Hiroshima, fundamentally involves slamming two pieces of HEU together at high speed. An “implosion-type” bomb, which is needed to get a sub-stantial explosive yield from plutonium, requires crushing nuclear material to a higher density—a more complex task, but still plausible for terrorists, especially if they got knowledgeable help. Many analysts argue that, since states spend billions of dollars and assign hundreds or thousands of people to building nuclear weapons, it is totally implausible that terrorists could carry out this task. Unfortunately, this argument is wrong, for two reasons. First, as the Manhattan Project statistic suggests, the difficult part of making a nuclear bomb is making the nuclear material. That is what states spend billions seeking to accomplish. Terrorists are highly unlikely to ever be able to make their own bomb material—but if they could get stolen material, that step would be bypassed. Second, it is far easier to make a crude, unsafe, unreliable bomb of uncertain yield, which might be delivered in the back of a truck, than to make the kind of nuclear weapon a state would want in its arsenal—a safe, reliable weapon of known yield that can be delivered by missile or combat aircraft. It is highly unlikely terrorists will ever be able to build that kind of nuclear weapon. Remaining vulnerabilities. While many countries have done a great deal to strengthen nuclear security, serious vulnerabilities remain. Around the world, there are stocks of nuclear weapons or materials whose security systems are not sufficient to protect against the full range of plausible outsider and insider threats they may face. As incidents like the intrusion at Y-12 in the United States in 2012 make clear, many nuclear facilities and transporters still grapple with serious problems of security culture. It is fair to say that every country where nuclear weapons, weapons-usable nuclear materials, major nuclear facilities, or dangerous radiological sources exist has more to do to ensure that these items are sustainably secured and accounted for. At least three lines of evidence confirm that important nuclear security weaknesses continue to exist. First, seizures of stolen HEU and separated plutonium continue to occur, including, mostly recently HEU seizures in 2003, 2006, 2010, and 2011.5 These seizures may result from material stolen long ago, but, at a minimum, they make clear that stocks of HEU and plutonium remain outside of regulatory control. Second, in cases where countries do realistic tests to probe whether security systems can protect against teams of clever adversaries determined to find a weak point, the adversaries sometimes succeed—even when their capabilities are within the set of threats the security system is designed to protect against. This happens with some regularity in the United States (though less often than before the 9/11 attacks); if more countries carried out comparable performance tests, one would likely see similar results. Third, in real non-nuclear thefts and terrorist attacks around the world, adversaries sometimes demonstrate capabilities and tactics well beyond what many nuclear security systems would likely be able to handle (see the discussion of the recent Västberga incident in Sweden). Of course, the initial theft of nuclear material would be only the first step. Adversaries would have to smuggle the material to wherever they wanted to make their bomb, and ultimately to the target. A variety of measures have been put in place in recent years to try to stop nuclear smuggling, from radiation detectors to national teams trained and equipped to deal with nuclear smuggling cases—and more should certainly be done. But once nuclear material has left the facility where it is supposed to be, it could be anywhere, and finding and recovering it poses an enormous challenge. The immense length of national borders, the huge scale of legitimate traffic, the myriad potential pathways across these borders, and the small size and weak radiation signal of the materials needed to make a nuclear bomb make nuclear smuggling extraordinarily difficult to stop. There is also the danger that a state such as North Korea might consciously decide to provide nuclear weapons or the materials needed to make them to terrorists. This possibility cannot be ruled out, but there is strong reason to believe that such conscious state decisions to provide these capabilities are a small part of the overall risk of nuclear terrorism. Dictators determined to maintain their power are highly unlikely to hand over the greatest weapon they have to terrorist groups they cannot control, who might well use it in ways that would provoke retaliation that would remove the dictator from power forever. Although nuclear forensics is by no means perfect, it would be only one of many lines of evidence that could potentially point back to the state that provided the materials; no state could ever be confident they could make such a transfer withoutbeing caught.6 And terrorists are unlikely to have enough money to make a substantial difference in either the odds of regime survival or the wealth of a regime’s elites, even in North Korea, one of the poorest countries on earth. On the other hand, serious risks would arise in North Korea, or other nuclear-armed states, in the event of state collapse—and as North Korea’s stockpile grows, one could imagine a general managing some of that stockpile concluding he could sell a piece of it and provide a golden parachute for himself and his family without getting caught. No one knows the real likelihood of nuclear terrorism. But the consequences of a terrorist nuclear blast would be so catastrophic that even a small chance is enough to justify urgent action to reduce the risk. The heart of a major city could be reduced to a smoldering radioactive ruin, leaving tens to hundreds of thousands of people dead. The perpetrators or others might claim to have more weapons already hidden in other major cities and threaten to set them off if their demands were not met—potentially provoking uncontrolled evacuation of many urban centers. Devastating economic consequences would reverberate worldwide. Kofi Annan, while serving as Secretary-General of the United Nations, warned that the global economic effects of a nuclear terrorist attack in a major city would push “tens of millions of people into dire poverty,” creating a “second death toll throughout the developing world.”7

### 1AC – Meltdowns

#### Meltdowns are inevitable – other models are flawed

Max - Planck- Gesselschaft 12 –The Max Planck Society for the Advancement of Science is a formally independent non-governmental and non-profit association of German research institute (Max-Planck-Gesellschaft, Major Reactor, 5-22-2012, "Severe nuclear reactor accidents likely every 10 to 20 years, European study suggests," ScienceDaily, <https://www.sciencedaily.com/releases/2012/05/120522134942.htm>) LADI

Fukushima are more likely to happen than previously assumed. Based on the operating hours of all civil nuclear reactors and the number of nuclear meltdowns that have occurred, scientists at the Max Planck Institute for Chemistry in Mainz have calculated that such events may occur once every 10 to 20 years (based on the current number of reactors) -- some 200 times more often than estimated in the past. The researchers also determined that, in the event of such a major accident, half of the radioactive caesium-137 would be spread over an area of more than 1,000 kilometres away from the nuclear reactor. Their results show that Western Europe is likely to be contaminated about once in 50 years by more than 40 kilobecquerel of caesium-137 per square meter. According to the International Atomic Energy Agency, an area is defined as being contaminated with radiation from this amount onwards. In view of their findings, the researchers call for an in-depth analysis and reassessment of the risks associated with nuclear power plants. The reactor accident in Fukushima has fuelled the discussion about nuclear energy and triggered Germany's exit from their nuclear power program. It appears that the global risk of such a catastrophe is higher than previously thought, a result of a study carried out by a research team led by Jos Lelieveld, Director of the Max Planck Institute for Chemistry in Mainz: "After Fukushima, the prospect of such an incident occurring again came into question, and whether we can actually calculate the radioactive fallout using our atmospheric models." According to the results of the study, a nuclear meltdown in one of the reactors in operation worldwide is likely to occur once in 10 to 20 years. Currently, there are 440 nuclear reactors in operation, and 60 more are planned. To determine the likelihood of a nuclear meltdown, the researchers applied a simple calculation. They divided the operating hours of all civilian nuclear reactors in the world, from the commissioning of the first up to the present, by the number of reactor meltdowns that have actually occurred. The total number of operating hours is 14,500 years, the number of reactor meltdowns comes to four -- one in Chernobyl and three in Fukushima. This translates into one major accident, being defined according to the International Nuclear Event Scale (INES), every 3,625 years. Even if this result is conservatively rounded to one major accident every 5,000 reactor years, the risk is 200 times higher than the estimate for catastrophic, non-contained core meltdowns made by the U.S. Nuclear Regulatory Commission in 1990. The Mainz researchers did not distinguish ages and types of reactors, or whether they are located in regions of enhanced risks, for example by earthquakes. After all, nobody had anticipated the reactor catastrophe in Japan.

#### Contamination spreads rapidly – no one is safe

Max - Planck- Gesselschaft 12 –The Max Planck Society for the Advancement of Science is a formally independent non-governmental and non-profit association of German research institute (Max-Planck-Gesellschaft, Major Reactor, 5-22-2012, "Severe nuclear reactor accidents likely every 10 to 20 years, European study suggests," ScienceDaily, https://www.sciencedaily.com/releases/2012/05/120522134942.htm) LADI

25 percent of the radioactive particles are transported further than 2,000 kilometres Subsequently, the researchers determined the geographic distribution of radioactive gases and particles around a possible accident site using a computer model that describes Earth's atmosphere. The model calculates meteorological conditions and flows, and also accounts for chemical reactions in the atmosphere. The model can compute the global distribution of trace gases, for example, and can also simulate the spreading of radioactive gases and particles. To approximate the radioactive contamination, the researchers calculated how the particles of radioactive caesium-137 (137Cs) disperse in the atmosphere, where they deposit on Earth's surface and in what quantities. The 137Cs isotope is a product of the nuclear fission of uranium. It has a half-life of 30 years and was one of the key elements in the radioactive contamination following the disasters of Chernobyl and Fukushima. The computer simulations revealed that, on average, only eight percent of the 137Cs particles are expected to deposit within an area of 50 kilometres around the nuclear accident site. Around 50 percent of the particles would be deposited outside a radius of 1,000 kilometres, and around 25 percent would spread even further than 2,000 kilometres. These results underscore that reactor accidents are likely to cause radioactive contamination well beyond national borders. The results of the dispersion calculations were combined with the likelihood of a nuclear meltdown and the actual density of reactors worldwide to calculate the current risk of radioactive contamination around the world. According to the International Atomic Energy Agency (IAEA), an area with more than 40 kilobecquerels of radioactivity per square meter is defined as contaminated. The team in Mainz found that in Western Europe, where the density of reactors is particularly high, the contamination by more than 40 kilobecquerels per square meter is expected to occur once in about every 50 years. It appears that citizens in the densely populated southwestern part of Germany run the worldwide highest risk of radioactive contamination, associated with the numerous nuclear power plants situated near the borders between France, Belgium and Germany, and the dominant westerly wind direction. If a single nuclear meltdown were to occur in Western Europe, around 28 million people on average would be affected by contamination of more than 40 kilobecquerels per square meter. This figure is even higher in southern Asia, due to the dense populations. A major nuclear accident there would affect around 34 million people, while in the eastern USA and in East Asia this would be 14 to 21 million people. "Germany's exit from the nuclear energy program will reduce the national risk of radioactive contamination. However, an even stronger reduction would result if Germany's neighbours were to switch off their reactors," says Jos Lelieveld. "Not only do we need an in-depth and public analysis of the actual risks of nuclear accidents. In light of our findings I believe an internationally coordinated phasing out of nuclear energy should also be considered ," adds the atmospheric chemist.

#### Fukushima proves the damage to the environment and human health is irreversible

Rosen 12 -- Dr Alex Rosen, University Clinic Düsseldorf, Department of General Pediatrics, (“Effects of the Fukushima nuclear meltdowns on environment and health” March 9th, 2012, <https://www.ippnw.de/commonFiles/pdfs/Atomenergie/FukushimaBackgroundPaper.pdf>) LADI

The Tōhoku earthquake on March 11th, 2011 led to multiple nuclear meltdowns in the reactors of the Fukushima Daiichi nuclear power plant in Northern Japan. Radioactive emissions from the plant caused widespread radioactive contamination of the entire region. The vast majority of the nuclear fallout occurred over the North Pacific, constituting the largest radioactive contamination of the oceans ever recorded. Soil and water samples, as well as marine animals have been found to be highly contaminated. Increased levels of radioactivity were recorded at all radiation measuring posts in the Northern Hemisphere. Fallout contaminated large parts of Eastern Honshu island, including the Tokyo metropolitan area. Within a 20 km radius, up to 200,000 people had to leave their homes. Outside of this evacuation zone, the radioactive fallout contaminated more than 870 km2 of land, home to about 70,000 people who were not evacuated. These people were exposed to harmful radioisotopes and now have an increased risk to develop cancer or other radiation-induced diseases. Many people still live in areas with high contamination. Food, milk and drinking water have been contaminated as well, leading to internal radiation exposure. Most severely affected are children, as their bodies are more susceptible to radiation damage. Preliminary tests have shown internal radioactive contamination of children with iodine-131 and caesium-137. It is too early to estimate the extent of health effects caused by the nuclear disaster. Taking into consideration the studies on Chernobyl survivors and the findings of the BEIR VII report, scientists will be able to estimate the effects once the true extent of radioactive emissions, fallout and contamination are better studied. Large-scale independent epidemiological studies are needed in order to better help the victims of this catastrophe. Claims by scientists affiliated with the nuclear industry that no health effects are to be expected are unscientific and immoral.

#### It’s the single greatest danger to the environment

Stapleton 9 - Richard M Stapleton Is the author of books such as Lead Is a Silent Hazard, writes for pollution issues (“Disasters: Nuclear Accidents” <http://www.pollutionissues.com/Co-Ea/Disasters-Nuclear-Accidents.html>) LADI

Of all the environmental disaster events that humans are capable of causing, nuclear disasters have the greatest damage potential. The radiation release associated with a nuclear disaster poses significant acute and chronic risks in the immediate environs and chronic risk over a wide geographic area. Radioactive contamination, which typically becomes airborne, is long-lived, with half-lives guaranteeing contamination for hundreds of years. Concerns over potential nuclear disasters center on nuclear reactors, typically those used to generate electric power. Other concerns involve the transport of nuclear waste and the temporary storage of spent radioactive fuel at nuclear power plants. The fear that terrorists would target a radiation source or create a "dirty bomb" capable of dispersing radiation over a populated area was added to these concerns following the 2001 terrorist attacks on New York City and Washington, D.C. Radioactive emissions of particular concern include strontium-90 and cesium-137, both having thirty-year-plus half-lives, and iodine-131, having a short half-life of eight days but known to cause thyroid cancer. In addition to being highly radioactive, cesium-137 is mistaken for potassium by living organisms. This means that it is passed on up the food chain and bioaccumulated by that process. Strontium-90 mimics the properties of calcium and is deposited in bones where it may either cause cancer or damage bone marrow cells.

#### Biodiversity loss risks extinction - ecosystems aren’t resilient or redundant

Vule 13-School of Biological Sciences, Louisiana Tech University (Jeffrey V. Yule \*, Robert J. Fournier and Patrick L. Hindmarsh, “Biodiversity, Extinction, and Humanity’s Future: The Ecological and Evolutionary Consequences of Human Population and Resource Use”, 2 April 2013, manities 2013, 2, 147–159) LADI

Ecologists recognize that the particulars of the relationship between biodiversity and community resilience in the face of disturbance (a broad range of phenomena including anything from drought, fire, and volcanic eruption to species introductions or removals) depend on context [16,17]. Sometimes disturbed communities return relatively readily to pre-disturbance conditions; sometimes they do not. However, accepting as a general truism that biodiversity is an ecological stabilizer is sensible— roughly equivalent to viewing seatbelt use as a good idea: although seatbelts increase the risk of injury in a small minority of car accidents, their use overwhelmingly reduces risk. As humans continue to modify natural environments, we may be reducing their ability to return to pre-disturbance conditions. The concern is not merely academic. Communities provide the ecosystem services on which both human and nonhuman life depends, including the cycling of carbon dioxide and oxygen by photosynthetic organisms, nitrogen fixation and the filtration of water by microbes, and pollination by insects. If disturbances alter communities to the extent that they can no longer provide these crucial services, extinctions (including, possibly, our own) become more likely. In ecology as in science in general, absolutes are rare. Science deals mainly in probabilities, in large part because it attempts to address the universe’s abundant uncertainties. Species-rich, diverse communities characterized by large numbers of multi-species interactions are not immune to being pushed from one relatively stable state characterized by particular species and interactions to other, quite different states in which formerly abundant species are entirely or nearly entirely absent. Nonetheless, in speciose communities, the removal of any single species is less likely to result in radical change. That said, there are no guarantees that the removal of even a single species from a biodiverse community will not have significant, completely unforeseen consequences. Indirect interactions can be unexpectedly important to community structure and, historically, have been difficult to observe until some form of disturbance (especially the introduction or elimination of a species) occurs. Experiments have revealed how the presence of predators can increase the diversity of prey species in communities, as when predators of a superior competitor among prey species will allow inferior competing prey species to persist [18]. Predators can have even more dramatic effects on communities. The presence or absence of sea otters determines whether inshore areas are characterized by diverse kelp forest communities or an alternative stable state of species poor urchin barrens [19]. In the latter case, the absence of otters leaves urchin populations unchecked to overgraze kelp forests, eliminating a habitat feature that supports a wide range of species across a variety of age classes. Aldo Leopold observed that when trying to determine how a device works by tinkering with it, the first rule of doing the job intelligently is to save all the parts [20]. The extinctions that humans have caused certainly represent a significant problem, but there is an additional difficulty with human investigations of and impacts on ecological and evolutionary processes. Often, our tinkering is unintentional and, as a result, recklessly ignores the necessity of caution. Following the logic inherited from Newtonian physics, humans expect single actions to have single effects. Desiring more game species, for instance, humans typically hunt predators (in North America, for instance, extirpating wolves so as to be able to have more deer or elk for themselves). Yet removing or adding predators has far reaching effects. Wolf removal has led to prey overpopulation, plant over browsing, and erosion [21]. After wolves were removed from Yellowstone National Park, the K of elk increased. This allowed for a shift in elk feeding patterns that left fewer trees alongside rivers, thus leaving less food for beaver and, consequently, fewer beaver dams and less wetland [22,23]. Such a situation represents, in microcosm, the inherent risk of allowing for the erosion of species diversity. In addition to providing habitat for a wide variety of species, wetlands serve as natural water purification systems. Although the Yellowstone region might not need that particular ecosystem service as much as other parts of the world, freshwater resources and wetlands are threatened globally, and the same logic of reduced biodiversity equating to reduced ecosystem services applies. Humans take actions without considering that when tugging on single threads, they unavoidably affect adjacent areas of the tapestry. While human population and per capita resource use remain high, so does the probability of ongoing biodiversity loss. At the very least, in the future people will have an even more skewed perspective than we do about what constitutes a diverse community. In that regard, future generations will be even more ignorant than we are. Of course, we also experience that shifting baseline perspective on biodiversity and population sizes, failing to recognize how much is missing from the world because we are unaware of what past generations saw [11]. But the consequences of diminished biodiversity might be more profound for humans than that. If the disturbance of communities and ecosystems results in species losses that reduce the availability of ecosystem services, human K and, sooner or later, human N will be reduced.